



Q&A with AT&T Hossein Eslambolchi explains why he believes his IP backbone rules. **PAGE 29.**

What's LWAPP? In our Technology Update section, we examine a proposed standard for wireless LAN device interoperability. **PAGE 33.**

NetworkWorld

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December 1, 2003 ■ Volume 20, Number 48

Anti-spam market braces for shakeout

■ BY CARA GARRETSON

With the onslaught of vendors jumping on the spam-fighting bandwagon, choosing the right anti-spam product can be almost as tedious as wading through an in-box of junk mail. But signs are pointing to a shakeout in the anti-spam market over the next year or two that will eliminate many of today's players.

By most counts there are about 70 anti-spam vendors, although The Radicati Group pins the number of companies selling any type of spam filter at about 300. As with other hot technology categories before it, the anti-spam market will shake down to a few significant players, as smaller companies that can't distinguish their products are gobbled up or perish, observers say. This should come as good news to IT managers who will have fewer options to wade through and can look forward to building relationships with large, sustainable vendors.

As evidence of the frenzy, Meta
See Anti-spam, page 14

■ **Congress' answer to spam draws mixed reactions.** Page 14.

SPECIAL SECTION

How To

Our step-by-step guide to addressing your most pressing network issues, including: ■ Migrating to utility computing ■ Getting more bang for your telecom bucks ■ Fighting spam ■ Mastering patch management ■ Locking down your wireless LANs ■ Adding 'oomph' to your net ■ Linking SAN islands **Page 42.**

GIACOMO MARCHESI

TechNet to release enterprise security tool

TechNet, a national organization of technology industry CEOs

pushing a policy agenda, tackles four to six issues per year, and this year one of the main agenda items was

cybersecurity. The TechNet task force that was assigned the job developed a security self-evaluation tool for business leaders that will be announced Dec. 3 at the Department of Homeland Security's National Cyber Security Summit in Santa Clara. Arthur Coviello, president and CEO of RSA Security, co-chair of TechNet New England and a cybersecurity task force member, described the tool and the task force's goals to Network World Editor in Chief John Dix.



Arthur Coviello

Before we get to the security tool, give us a little background on the mission of the cybersecurity task force.


Basically to provide a mechanism for TechNet members, one, to inform and influence cybersecurity policy making and commercial sector practices; two, to support public/private

See Coviello, page 12

The old switcheroo

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boxes can be flattened walls can be torn down leashes can be broken
gates can be unlocked welcome to the

other side

of the fence



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- **Fighting spam** ■ **Mastering patch management** ■ **Locking down your wireless LANs**
- **Adding 'oomph' to your network**
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ILLUSTRATION: GIACOMO MARCHESI

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Interactive

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Columnists

Compendium

Cracked: Case of the weird search queries
Fusion Executive Editor Adam Gaffin says the site's been getting some strange search queries as of late. A reader thinks we're getting hit with a Windows desktop tool called Copernic. **DocFinder: 8732**

Telework Beat

When you can't work from home
Net.Worker Managing Editor Toni Kistner looks at SuiteWorks, which is planning high-tech, all-inclusive, corporate telework centers in Canada and the U.S. **DocFinder: 8733**

Small Business Tech

Toshiba tops the all-in-one heap
Columnist James Gaskin has many compliments and few complaints for the Magnia SG30 Wireless Mobility Server. **DocFinder: 8734**

Home Base

Growing a niche business
Columnist Ron Miller shows how, with a mix of Web consulting and non-technical tools, one man brought his small business online. **DocFinder: 8735**

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IBM's L190p flat-panel monitor swivels, tilts and lifts for better viewing. Page 36.



News Bits

Microsoft dropping gavel on NetMeeting

■ NetMeeting, once hyped as Microsoft's answer to online conferencing, is being gradually phased out in favor of the company's newest real-time collaboration tool, according to company officials. Microsoft already has ceased development of the software. NetMeeting, first introduced in 1996, gives way to Office Live Meeting, a browser-based conferencing service that Microsoft acquired when it bought PlaceWare earlier this year. The service, and eventually a server based on the technology that will include applications sharing and whiteboarding, will be linked into other real-time collaboration tools from Microsoft such as Live Communications Server and with client applications that are part of Office.

Layoffs loom at Sprint

■ Sprint announced last week that 2,000 employees will be getting pink slips. The carrier says it's reducing its staff in an effort to lower the company's "total operating expenses by 5% to 7% over the next three years or more than \$1 billion annually." Sprint announced its plans to reduce costs in September. Jobs are being eliminated in nearly all departments, according to the carrier. The layoffs are also the result of the service provider's reorganization. Sprint has been restructuring the company into two divisions that will address the consumer and business markets. Previously the company was divided into several divisions, including wireless, global markets and local services. Sprint says employees affected by the layoffs will receive severance packages based on length of service.

The latest Microsoft vulnerability

■ A set of new security vulnerabilities have been discovered in Microsoft's Internet Explorer Web browser that used together could let hackers compromise user PCs, researchers warned last week. The five vulnerabilities have been reported in Internet Explorer 6.0, although other versions might have been affected, according to a bulletin released by security company Secunia. The scripting flaws could let hackers bypass security and compromise systems, giving them access to sensitive information and cross-site scripting, according to Secunia. Secunia has classified the vulnerabilities as "extremely critical" and is advising all Internet Explorer users to disable Active Scripting or "use another product." Microsoft has advised users to download its latest Internet Explorer cumulative patch, released Nov. 11, while it looks into the new vulnerabilities.

Government lights up lab network

■ The Department of Energy's Office of Science last week awarded the Oak Ridge National Laboratory in Tennessee \$4.5 million to design a high-speed network capable of operating at 10G to 40G bit/sec. That speed is about 200,000 to 800,000 times faster than the fastest dial-up connection of 56K bit/sec, according to a press release from the lab. The prototype system, dubbed Science UltraNet, would link ORNL with other research institu-

The Good The Bad The Ugly



In the money. While funding still is tough to come by for many new network companies, voice-over-IP service provider Vonage has parlayed its success and publicity into a fresh \$35 million in venture capital. New Enterprise Associates led the round, which brings Vonage's total funding to \$65.3 million.



Mad hatters. Researchers at Cornell and the University of Virginia are readying a challenge to Red Hat's Fedora trademark, currently under review by the U.S. Patent and Trademark Office. Fedora is Red Hat's experimental Linux project that was launched as a community-developed alternative to Red Hat Enterprise Linux in September. The universities use the name Fedora for digital management software that has been downloaded by more than 1,000 users since Version 1.0 was released in May. ➤



BRIAN GAIDRY



It's wrong, wrong, wrong . . . but. What's wrong? Threatening to harm a spammer using bullets, an ice pick and a power drill — even Anthrax. Programmer Charles Booher acknowledges as much now that he's facing criminal charges for his long-running tirade against a Canadian company he says wouldn't stop sending him pitches for penis-enlargement products. Prosecutors still will have to convince a jury, though, all of whom no doubt have in-boxes.

tions that rely on supercomputers capable of trillions of calculations per second. The network would let the scientists quickly complete projects that require the transfer of large amounts of data. The three-year effort would let the three ORNL scientists in charge set up an experimental network linking the Oak Ridge lab to others in Atlanta, Chicago and California.

VoIP shipments boom

■ A report released last week from Dell'Oro Group shows that enterprise IP PBX line shipments in the third quarter reached 1.53 million, double that from the same quarter a year ago. Line shipments also grew by 23% over the previous quarter, the Dell'Oro report says. The market leader is Cisco, which saw its line shipments grow by 58% over the third quarter of last year. Nortel was second in terms of line shipments, followed by Avaya, Alcatel and Siemens. Avaya saw the second-best growth spurt in the market last quarter, increasing its shipments by 28%.

Leader of HP-Compaq integration leaves company

■ Jeff Clarke, the former Compaq CFO who led the integration team overseeing the company's merger with HP, has resigned effective immediately from HP. Along with Webb McKinney, who also recently announced plans to retire, Clarke was in charge of orchestrating the integration of the largest acquisition in the technology industry's history. After the integration, Clarke assumed the role of executive vice president of global operations in charge of HP's supply chain operations. An HP spokesman said the company would not comment on reasons for Clarke's departure. A call to Clarke's office was greeted by an automated message informing callers the line had been disconnected, and an e-mail message was returned to sender. A number of HP executives have left the company in recent weeks, including the former head of Compaq's server division, Mary McDowell. Despite the departures, HP last week posted its best financial results since the merger with Compaq.

COMPENDIUM

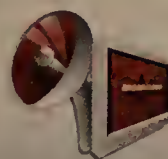
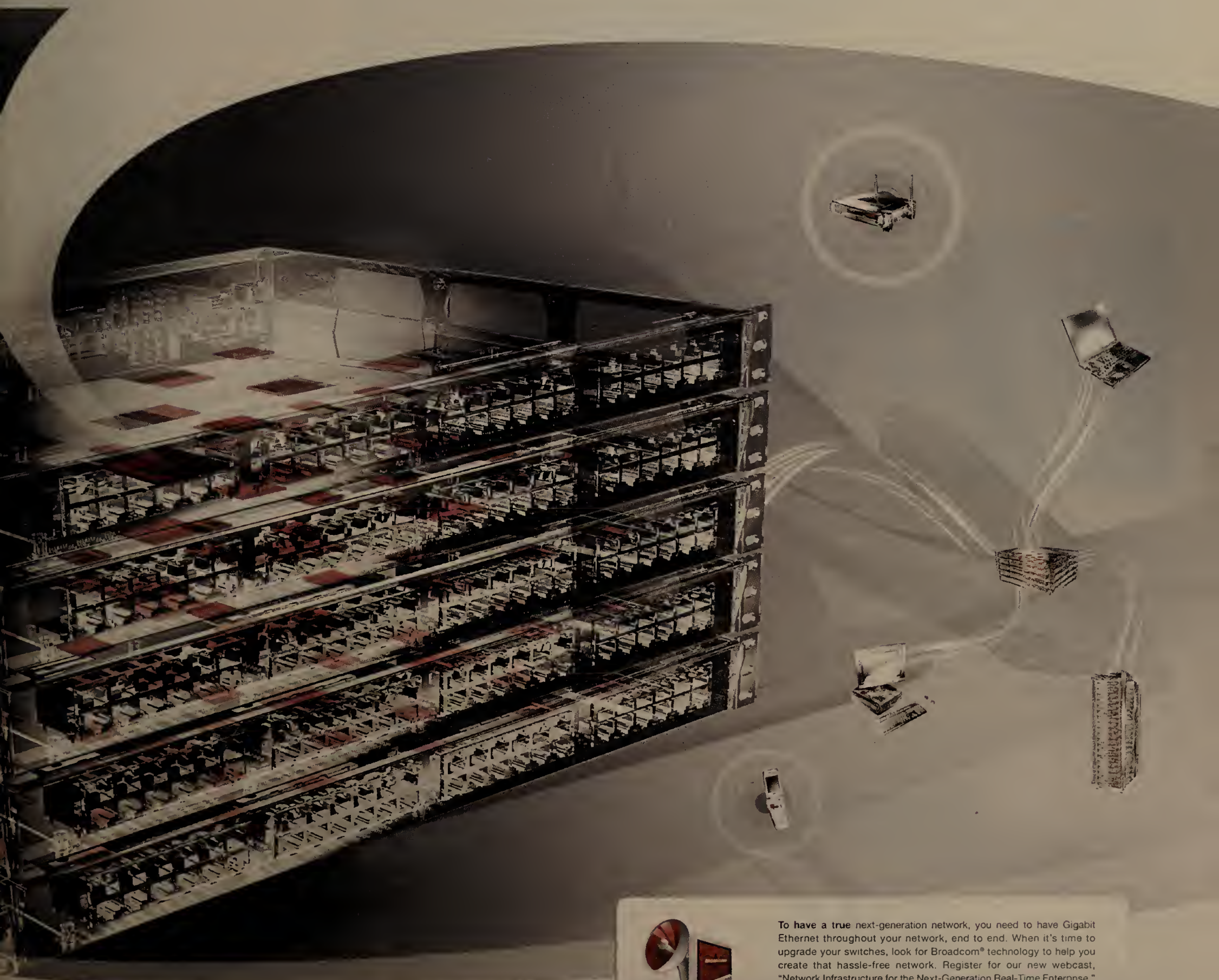
RFIDs get easier to swallow

The ITJ Strategy and Policy Unit Newslog reports that a Tokyo sushi restaurant is now using radio frequency identification tags to ensure customers get sushi that is no more than 30 minutes old. Read more of what's on the menu at www.nwfusion.com, DocFinder: 8736.

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Source: ¹ IDC, Network Overview, August, 2003

App server rivals team on specs

■ BY ANN BEDNARZ

IBM and BEA Systems last week announced they are working jointly on three specifications aimed at making it easier for customers to port applications between the two companies' rival application server platforms, IBM's WebSphere Application Server and BEA's WebLogic Server.

The specifications' intent is to simplify the task of building application server components, such as servlets and Enterprise JavaBeans, and make it easier for customers to run applications that work across both companies' Java 2 Platform Enterprise Edition (J2EE) servers.

"The Java platform is very powerful in terms of capabilities, but it's also fairly complex and requires very talented programmers," says Ed Cobb, BEA's vice president of architecture and standards. The three specifications are about providing common tools so it's easier for corporate developers to build applications in Java, Cobb says.

IBM and BEA are the two dominant application server vendors, with a combined 66% market share, according to Gartner. The fact that the two leaders have gotten together to create the specifications is good news for customers, says Ted Schadler, principal analyst at Forrester Research. Customers want choices, and they don't want to be locked into one platform, he says. "They want control over how the technology is deployed and how it works together," he says.

The companies' joint specifications are:

- Service Data Objects, which provides a consistent means for an application to extract data from heterogeneous data sources, including relational databases, XML data sources, Web services and enterprise information systems.
- Work Manager for Application Servers, which provides a way for J2EE-based applications to schedule work items that are executed concurrently.
- Timer for Application Servers, which provides a way for J2EE-based applications to schedule and receive timer notifications.

IBM and BEA plan to implement the specifications in their respective WebSphere and WebLogic platforms in the next 12 months, the companies say. They plan to submit the proposed specifications to the Java Community Process (JCP), a standards-setting body created by Sun.

The two companies opted to first collaborate independent of a standards body in the hopes of accelerating the standards process. "We're hoping that by taking some leadership on the innovation side and getting these specifications down on paper, it will shorten the cycle," says Rod Smith, vice president in charge of IBM's Internet and emerging technologies.

When standards are created by committee, it's a slow, painful and often politically motivated process, Schadler says. Building support for a specification in the field speeds standards adoption, but it's not the way the JCP has worked historically. "The JCP has been very much of an old school standards body," Schadler says. "[As a result] the pace of improvement in Java has been glacial."

IBM has teamed with rivals in the past for the sake of speeding standards development, most notably working with Microsoft on Web services standards such as Simple Object Access Protocol, Web Services Description Language and Business Process Execution Language for Web Services.

While rivals might not appreciate two dominant vendors getting together on what potentially could become de facto standardization, customers do, Schadler says.

So far, application server rivals such as Sun and Oracle have not pledged their support for the proposed standards from IBM and BEA ■

ReefEdge, others aim to advance wireless LANs

■ BY JOHN COX

ReefEdge Networks, a specialist in security gateways, this week will jump into the crowded wireless LAN switch market with products designed to help customers more fully centralize WLAN management.

Industry observers see the move as one of competitive necessity. The emergence of WLAN switch vendors such as Airespace and Aruba Wireless Networks that provide management capabilities on top of security features is forcing security gateway vendors to extend their offerings with management tools.

ReefEdge will be one of a number of vendors making WLAN-related announcements at this week's Wi-Fi Planet show in San Jose.

All-in-one box

The ReefSwitch 25's features include:



- Layer 2 and 3 switching.
- Up to three ports for accessing WLAN access points.
- A built-in access point.
- Pricing that starts at \$1,390.

The company's ReefSwitches, of which there initially will be three models, are designed to support WLANs spread over numerous locations, such as a chain of retail stores. The products will work with ReefEdge's existing gateways, which provide security features for wireless access points and link with existing network security systems, such as RADIUS authentication servers. However, the new switches also will provide a migration path for ReefEdge customers away from the more one-dimensional gateways.

The ReefSwitches are Layer 2/Layer 3 Ethernet devices that run an operating system that incorporates much of the code from the gateway line, but they also include software for such jobs as managing radio waves and detecting unauthorized access points. The switches are designed to work with third-party access points — starting with Cisco's Aironet line and later with offerings from Netgear, Proxim and Symbol Technologies.

"They've always been a cross-platform company," says Craig Mathias, principal with Farpont Group. "Their goal is to provide all the functionality that a WLAN system doesn't have but needs, and do this for WLANs at multiple sites."

The smallest of the new switches, the ReefSwitch 25, is for sites with no network or IT support staff. Administrators plug in the device and directly attach up to three WLAN access points or use the built-in access point. The box connects to a higher-end ReefSwitch at a central site, downloading configura-

tion and settings from that switch.

Mark Juliano, ReefEdge's vice president of strategy, says the device can support local users even if the back-end WAN connection is down. The operating system minimizes network congestion by handling all local traffic on its own and only sending back to a central site that traffic which must go there, he says. For example, the ReefSwitch 25 has a local database to handle authentication and can support security schemes such as IP Security on a VPN or 802.1x. It also can work with central RADIUS servers.

The ReefSwitch 25 starts at \$1,390, about half the cost of Aruba's new 800 model switch, which also features optional software applications at \$2,000 apiece.

The higher-end ReefSwitch 200A comes with four Gigabit Ethernet ports and is designed for data centers or network operations centers. Its software lets administrators configure, monitor and secure the branch-office devices, and perform remote monitoring of the radio frequencies in those branches. The starting price is \$9,900.

Early next year, ReefEdge will ship the ReefSwitch 300, with 12 Ethernet ports and Gigabit Ethernet support to link with the backbone. As such, it can be installed in wiring closets or at the network core. The starting price is expected to be \$12,900.

Also on the WLAN front this week:

- Network Chemistry is planning to introduce its Wireless Intrusion Protection System, which includes radio sensors that can run on 2.4- and 5-GHz bands. The product is designed to monitor airwaves and feed back to a Windows application an array of real-time diagnostic measures on access points and wireless clients. Sensors support power over Ethernet and don't require a wall outlet. The sensors cost about \$500.

- Enterasys Networks will unveil the RoamAbout AP3000 access point, which can work on either the 2.4- or 5-GHz bands, and connects via 802.11a, b or g. The device can be set up as an individual access point or as part of the network infrastructure managed by Enterasys' NetSight Atlas management application.

- Proxim is expected to update its Orinoco AP-2000 and AP-600 access points with an array of new security features and better scalability (although the company did not reveal many details). Among other things, the devices now will detect rogue access points.

- For equipment makers, Propagate Networks will unveil its AutoCell software for creating self-adjusting wireless access points and client network interface cards. The software monitors the entire WLAN radio frequency and adjusts variables such as radio power levels to minimize radio interference.

- Also for equipment makers, Fabless semiconductor company Motia will air a "beam-forming" WLAN antenna called Javelin. Such antennas have several components to receive signals, and software combines the signals for optimum strength. Motia says the antenna can extend typical WLAN ranges by a factor of four when used in the client and access point. The antenna is for 802.11b and 802.11g devices and works with any transceiver chipset, according to the vendor. ■



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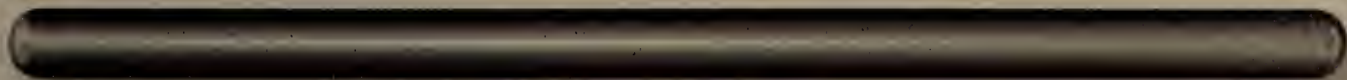
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Dell brings some tech support home

■ BY TOM KRAZIT

Dell last week said it has brought some technical support work back to the U.S. after corporate customers complained about the quality of service they were receiving from workers in other countries.

The company has moved aggressively to shift technical support to centers in countries such as India, but complaints have caused Dell to move support for its Optiplex desktops and Latitude notebooks back to U.S. call centers in Idaho, Texas and Tennessee, among others, according to a Dell spokesman. He could not cite any other examples of Dell having shifted support from overseas to the U.S.

Dozens of U.S. companies have set up technical support and software development centers in India, China and other countries where they can pay workers far less than a typical U.S. worker would command for the same position. The companies say this approach has allowed them to cut costs dramatically, but some U.S. workers and politicians fear companies will permanently move all types of back-office jobs outside of the U.S., forcing workers to seek new types of employment.

Dell said support calls for products other than the Optiplex desktops and Latitude notebooks and consumer support still will be handled by one of its 20 global call centers, based on capacity.

Krazit is a correspondent with IDG News Service's Boston bureau.

Mirage protects the LAN

■ BY TIM GREENE

Mirage Networks is wheeling out an appliance designed to halt quick-spreading, LAN-based worms and viruses by neutralizing individual infected machines rather than cordoning off entire parts of affected networks.

Called the Mi40 Inverted Firewall, the device intercepts attacks by responding as if it is the targeted host so further attempts never reach the targeted machines. This cuts off the attack without disrupting network access for other devices.

While competitor Silicon Defense performs similar functions, Mirage says its Inverted Firewall can block attacks host-by-host without shutting down access to entire subnets. The Mi40 can intercept traffic from the specific IP ports generating the suspect traffic, making it possible to block the attack but still use the infected machine safely. "They can still do other work on

PROFILE: MIRAGE NETWORKS	
Location:	Austin, Texas
Founded:	October 2001
Founders:	Mark Wilkinson, CTO; Ron Miller, vice president of testing and problem resolution.
Product:	Mi40 Inverted Firewall.
Financing:	\$8 million from CenterPoint Ventures and Adams Capital Management.
Competitors:	Silicon Defense, TippingPoint Technologies, IntruVert Networks, OneSecure, Check Point.
Employees:	30

that machine, but it denies the worm the ability to do its damage," says Michael Disabato, an analyst with Burton Group.

Inverted Firewall connects to mirroring ports on up to four LAN switches at a time, monitoring all their traffic for signs of possible intrusions. These include attempts to reach unassigned IP addresses (something worms do to scan for vulnerable machines), improperly config-

ured packet headers and sudden spikes in the number of IP addresses with which a host tries to talk.

If it suspects an attack against an active IP address, it redirects the attack to itself and drops the traffic. If the suspicious behavior stops and a preset time interval elapses, Inverted Firewall stops intercepting traffic from the suspect machine. The Inverted Firewall also responds to attempts to reach unassigned IP addresses, tying up all the attack threads from the infected host.

Answering messages sent to unassigned IP addresses also can work as an early warning system, says Mark Wilkinson, Mirage CTO and a co-founder of the 2-year-old start-up. Unassigned addresses have a better chance of being hit first or early in an attack that is probing random IP addresses. That is because 80% or more of private IP addresses are unassigned in most corporate networks, he says.

Competing security vendors include NetScreen Technologies and IntruVert Networks, but they are focused more on stopping incursions entering from the WAN.

Inverted Firewall differs from some other intrusion-protection and -detection devices in that it does not sit in-line with traffic, meaning that it does not slow traffic as it works, nor does it block traffic if it crashes.

It also differs in that it bases detection solely on rules about the behavior of network devices, not packet-level signatures. The Mi40 learns patterns of normal network traffic over time, helping it decide what is suspect traffic.

Mi40 Inverted Firewall is expected to be available in the middle of this month and costs \$12,000. ■

Server market shows signs of life

■ BY ROBERT MCMILLAN

After two years of contraction the worldwide server market is growing again, according to the latest figures from IDC.

Server revenue for the third quarter grew by 2% compared with the same period a year earlier, says Mark Melenovsky, program director in IDC's server group. Worldwide server revenue, which includes the costs of server hardware, operating systems and initial storage shipments, reached \$10.8 billion, up from \$10.6 billion in the year-ago quarter.

Measured by the number of units shipped, the server market grew by 19.5%, led by strong sales of servers based on processors from Intel and Advanced Micro Devices, IDC found.

"This is a good sign and, I think, a sign that spending for enterprise IT is on a growth target," Melenovsky says. He predicts that the market will grow by 2% or 3% year-over-year next quarter, and that server sales for 2004 would increase by about 5% over 2003.

IBM retained its lead of the server market, with a 31.1% market share on revenue of \$3.4 billion. HP was second, with 27.7% on \$3 billion in revenue, followed by Sun and Dell, with 10.8% and 9.5% of the market, on sales of \$1.17 billion and \$1.03 billion, respectively.

IBM extended its lead over HP slightly by posting strong growth in all its server lines, he says. The company's server revenue increased by 6.6% year-over-year. Its pSeries Unix systems did particularly well, bucking an industry trend and growing by 2% in a Unix server market that shrunk by 3.8% overall. The gains were

due in part to a wide-ranging refresh of IBM's pSeries servers, many of which were upgraded to Power4+ processors this year.

Sun was hardest hit by the decline in Unix spending. Its market share dropped by 9.3% from the same quarter in 2002. Strong growth in the Linux market, which grew by 50%, took its toll on Sun. Linux systems sold particularly well in high-performance computing clusters as well as the Web infrastructure market, and did not appear to be affected by The SCO Group's claims of intellectual property violations in the Linux operating system, he says.

A better VPN on the way?

■ BY TIM GREENE

There might soon be a new standard that makes IP Security VPNs more secure and easier to configure.

After two years of deliberations, a committee of the Internet Engineering Task Force is just about ready with a proposal to replace Internet Key Exchange (IKE), the protocol that manages encryption keys under the IPSec standards.

The group was looking at revising IKE because it was deemed theoretically at risk of attacks, although no successful exploit has ever been reported.

Part of its weakness stems from the fact that it is complex. In other words, attackers have more components to try to crack. The complexity also makes it more difficult for vendors

Windows server sales also grew at a respectable pace, increasing by 10% from the previous year, Melenovsky says. "There are a lot of systems that were bought in 1999 or 2000 that are ... being replaced," he says.

When measured by the number of units shipped, Windows remained far ahead of Linux, with 841,000 Windows servers shipped in the quarter, compared with 210,000 Linux boxes, Melenovsky says.

McMillan is a correspondent with IDG News Service's San Francisco bureau.

to sync up their implementations with those of other vendors. Interoperability problems make it more difficult to create VPN tunnels with business partners that have bought VPN gear from different vendors.

The new proposal, called IKEv2, would be less flexible than IKE, but that is the price of simplicity. This streamlining of the protocol also would be reflected in the configuration parameters of VPN equipment: with fewer parameters to set, configuration would be less time-consuming. With fewer fields to fill in, there also would be less opportunity for human error that could take a lot of effort to uncover and correct.

At its recent meeting, the IETF working group on IPSec declared the draft of the IKEv2 proposal ready for publication, with a vote on it to follow shortly after that. ■

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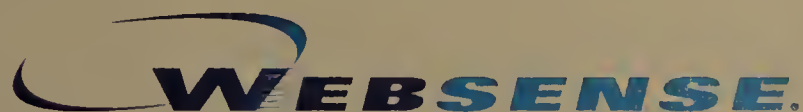
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NASDAQ: WBSN

Coviello

Continued from page 1

efforts to protect America's information infrastructure; and three, to promote awareness and best practices in cybersecurity — which is what this tool is about — then develop policy statements on key topics. What we're trying to do is get everyone to use this self-assessment tool by April 4, 2004, which would be roughly four months after we announce it. We're calling it a national cybersecurity day.

Describe the tool.

It covers multiple areas. One section is on business dependency, how much you rely on IT. Then there is a section about risk evaluation and then a segment about people, evaluating the personnel aspect of your information security program. Then processes: What are your processes for implementing security? And technology evaluation is the last section.

Is it aimed at CEOs?

The CEO and CIO ought to look at the business-dependency and risk-management evaluation, and then bring in other people for the people, process and technology sections. It is a questionnaire. It is not a panacea for security. But if you follow these questions it will lead you down the path of how to properly evaluate your security and help you recognize where you might be deficient.

The primary purpose of us doing this is we don't think there is enough awareness about cybersecurity at the CEO level. Now, I happen to think that

the planets are aligning and there is certainly far more CEO attention being called to issues of internal control — especially with Sarbanes-Oxley's provisions on internal control — and any cybersecurity system tends to be a subset of your overall internal control system.

So this tool gives CEOs the



Arthur Coviello, president and co-chair of TechNet New England, says the group's new security self-evaluation tool will help companies put security issues in a context that upper management can relate to. TechNet includes a variety of industry bigwigs, such as John Chambers, CEO of Cisco, and Carly Fiorina, CEO of HP.

ability to look at the cyber aspects of their overall system of internal controls and make sure that particular flank is covered. And as more companies rely and depend on the Internet to run their businesses, this tool becomes more critical to use and understand.

You said you used the tool internally at RSA and it actually helped. What did you discover?

It allowed me to revisit a lot of the work we had done and do it in a very structured fashion. And keep in mind that any cybersecurity system, or any system of internal control, needs to be constantly reviewed and updated. And this gives a very useful guideline not only for evaluating it for the first time, but also for going back on a regular basis to ensure that things are properly updated and followed.

Our documentation around policy and procedures needed to be better, because with changing personnel you have to make sure these things are documented. I certainly found it useful in that respect. I also found it useful in terms of confirming the things we were doing correctly, that we had the processes and technology and the people watching over it.

How long does the evaluation take?

It can be done in a matter of hours, but a lot of it is in the follow-up work, in following up questions that you might not have the answers to. It will vary from business to business.

There could be wide divergence in the time it took us vs. a company that needs to overhaul its internal controls. But in terms of just pointing you in the right direction, just to get through the questionnaire itself is a matter of hours. It's about 80 questions, 15 pages. (The document will be available at www.technet.org after Dec. 3.)

How many people do you need to assemble to get through it?

You're going to want to start off with the CEO, the CIO, the CSO if you have one, certain members of the IT team. I would recommend you bring the CFO into the discussion as well. Depending on what issues come out of it, then you're going to bring in other staff to see that issues that need to get addressed get addressed by the appropriate functional area.

Why should CEOs believe a bunch of security vendors about the best approach to security? Won't most be suspect of your motives?

We reference a lot of material, and we're not telling people to go out and buy all sorts of products. But if companies such as RSA and Internet Security Systems and VeriSign don't know at least about the technology, I don't know who the heck would. Certainly other folks like the CPA firms can add a lot of value, but this is a tool that is pretty generic, and I would think people would give us a certain amount of credit for having the right knowledge and expertise to make a judgment in this area.

Is your hope that if industry does these self-evaluations it will preempt any efforts to regulate security?

What we want from the government is to play the right role. There seems to be violent agreement that it would be very difficult for federal and state government to legislate specific technologies around security because, one, the lack of expertise, whether it is the FCC or Congress or in general; and two, the dynamic nature of IT systems.

Having said that, the government already regulates a number of industries, such as public utilities, telecommunications, financial services and health care. And I'm certainly not suggesting that government doesn't have a role to play in respect to issues of individual consumers and people's privacy. But to legislate very specific requirements around cybersecurity where industries and risk profiles are so different, I would not be in favor of seeing that.

We need companies to self-regulate. There is a strong market requirement to do that — risk of financial loss, risk of loss of reputation, trust. And there are technologies out there that can take care of the lion's share of the threats, and that's why TechNet's leadership is good in terms of promoting that.

If you look at any of the spending and budget polls, you'll always see security at or near the top, so companies are taking the issues seriously. We would like to see CEOs have a better understanding overall of why the issue is so important. And it comes back to the tool as being a good way to bring awareness at the CEO level.

You talk about security being a business-level concern now. How best can IT leaders promote this within their organizations?

There is a tendency for technologists just to think in terms of technology and talk about budgets for this and implementing that, and because we understand as technologists the business importance for it, we assume others do.

This tool, especially the business-dependency and risk-assessment aspects, should be something that is read by technologists so that when they communicate with upper management they can put issues in context. In that sense it is a great tool. ■

Correction

■ The Cool Tools column (Nov. 24, page 32) should not have stated that the Beatman can take an optional SmartMedia Card.



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Anti-spam

continued from page 1

Group analyst Matt Cain says at least \$150 million of venture capital has been invested in anti-spam companies over the past six months. "There will be a heck of a lot of dissatisfied [venture capitalists] because not all of these companies will make it," he says. "We see the market expanding through 2004 and expect in 2005 there will be a severe contraction and market consolidation characterized by vendor failure and very aggressive merger and acquisition activity."

In the short term, pricing for anti-spam products will decline as competition remains strong, Cain continues, but once market players establish themselves, companies can expect to pay more. "Over the next two years, once we see consolidation down to 10, then maybe five vendors, we expect to see prices escalate. However, the products will mature and functionality will expand, so you'll be paying more but you'll be getting

more," he says.

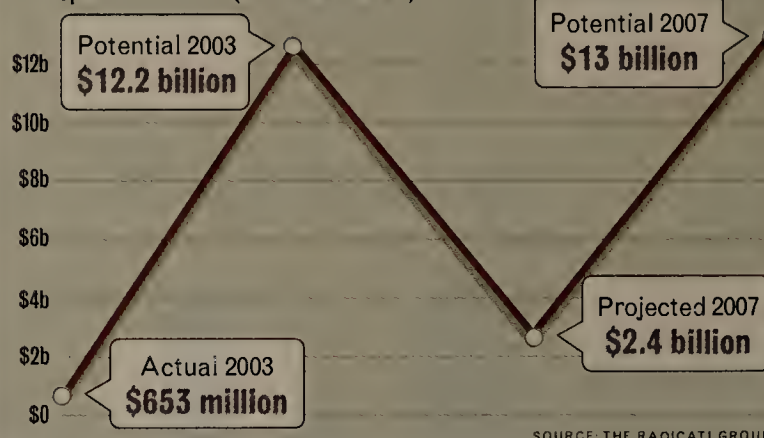
No one expects the market to contract just yet, although signs of consolidation are beginning to emerge. E-mail services company IronPort last week announced the acquisition of anti-spam community and blacklist maintainer SpamCop, with plans to integrate SpamCop's feedback on spammers into its e-mail rating system. Other moves include anti-virus vendor Sophos' acquisition of spam filter maker ActiveState, and security company Network Associates' purchase of anti-spam software developer Deersoft.

Nonetheless, with only about 30% of all corporations employing spam filters today, there are still plenty of opportunities for vendors (see graphic). "The market is so big that lots of [anti-spam] companies are doing well," says Doug Carlisle, managing director of Menlo Ventures, a venture capital firm that has investments in anti-spam players IronPort and MailFrontier. "But we will end up with around 10 companies that provide functionality

Room to grow

Only about 30% of companies today employ anti-spam technology, leaving much of the potential customer base untapped.

Anti-spam market size (in revenue dollars)



at the high and low end, and that can differentiate their products and services."

So many vendors are rushing to provide spam filters because corporations recently have realized just how strategic e-mail communication is to their organization and are looking for ways to pro-

tect it. "Business is undergoing a huge transformation from phone-based conversations to [Simple Mail Transfer Protocol]-based conversations, be it through e-mail or attached messages," Carlisle says. "Big companies are waking up around the world saying 'we run our business on

SMTP' but didn't really realize that they don't have an industrial-strength solution in place."

At the same time, companies don't want to tie all their e-mail security products together themselves, so anti-spam vendors will be forced to expand into other areas such as anti-virus protection — as many have — and content filtering and policy management, while e-mail security companies add spam filters to their offerings.

"Secure messaging is still a highly fragmented market . . . but I think all vendors recognize what were once products and became markets will turn into features, especially as customers require more integration," says Chris Christiansen, an analyst at IDC. "Quite a few smaller vendors who are highly specialized will be pushed to be sold or merge. It's quite clear . . . many of these [larger] companies could go public in the near future."

While it's evident the anti-spam market will consolidate, what isn't as obvious is which vendors will survive the shakeout. Large, public security companies such as Network Associates and Symantec are marching into the anti-spam market and are natural dominators because of their success in related areas such as anti-virus. Still, a few companies that have dedicated themselves to spam protection, such as Brightmail and Postini, stand a chance because of their anti-spam expertise.

"Over the next two years some of these [anti-spam] companies will clearly get traction, and either those companies will go public and get currency, or be acquired and have the currency of [the acquiring company]," says Bud Colligan, a partner with venture capital firm Accel Partners, which invested in Brightmail five years ago. "The other companies won't scale as rapidly, and their investors will start saying 'There's no place for a ninth or 10th player in this market.' Everyone will try to find a dance partner before the music stops."

Until then, IT departments will continue to have to sort out the anti-spam frenzy on their own. "It's going to be a lot of hard work for IT managers for the next two or three years, as they'll be bombarded with possible solutions," says Sara Radicati, an analyst at The Radicati Group. ■

Congress set to enact opt-out spam law

■ BY CARA GARRETSON

Congress last week reached an agreement on the first piece of federal legislation to curtail spam, marking a coup for e-mail dependent businesses that can continue sending messages until recipients tell them not to.

Known as the Controlling the Assault of Non-Solicited Pornography and Marketing (CAN-SPAM) Act, the bill bounced back and forth between the Senate and the House of Representatives this fall before lawmakers reached an agreement last week. The bill requires one more procedural vote by the House — expected to take place later this month — before it is presented to President George Bush, who is widely expected to sign it.

The bill takes an opt-out approach, meaning businesses can send unsolicited commercial e-mail as long as each message includes a mechanism for recipients to request not to receive more. Proponents say that along with a number of other provisions in the bill, the opt-out feature will help cut down on spam because recipients will be able to remove themselves from e-mailing lists.

However, some say CAN-SPAM actually will open the spam floodgates even wider. By allowing opt-out unsolicited e-mail, some observers say the law will give businesses once hesitant to send commercial e-mail license to do so, as long as they include an opt-out component.

"Spammers have the opportunity to keep spamming, as long as they include an opt-out in the body of the e-mail," says Chris Belthoff, senior security analyst with Sophos, which

Congress v. spam

The main provisions of the CAN-SPAM Act are:

- Recipients have the right to opt out of receiving unwanted commercial e-mail.
- Violators face fines of up to \$2 million, tripled to \$6 million if violations are considered intentional.
- FTC can establish a "Do not spam" registry, although it is not mandated.
- Sending fraudulent e-mail is criminalized, with penalty of up to five years in prison.
- FTC and state attorneys general can prosecute offenders.

SOURCE: OFFICE OF THE HOUSE ENERGY AND COMMERCE COMMITTEE

sells anti-virus and anti-spam software. "This law is not saying that [sending spam] is illegal or that they're not allowed to do it." Another issue with the bill will be tracking down those who don't respect opt-out requests, he says.

CAN-SPAM will override state laws governing unsolicited e-mail, including California's controversial Senate Bill 186, which is set to be enforced starting Jan. 1. That bill would force all businesses sending commercial e-mail to the state's residents to have the recipients' consent, aka opt-in.

Companies that rely on e-mail communication with customers will be relieved by the

passage of CAN-SPAM, says Deborah Thoren-Peden, a partner with law firm Pillsbury Winthrop, because they won't have to follow the stringent California law that would force them to obtain and retain any e-mail recipient's permission before e-mailing them.

"Even for our clients trying very hard to comply [with the California law], it was going to cause extreme difficulties for them," she says. "I'm sure a number of businesses will be pleased to see that they now have a little bit of breathing room."

The federal bill only will supersede state laws that specifically regulate the use of unsolicited commercial e-mail, Thoren-Peden says, meaning state laws that deal with e-mail fraud will remain in effect. CAN-SPAM will not supersede international laws regulating commercial e-mail, she adds, which tend to be as strict as the California law.

Companies that send commercial e-mail on a national level also will be relieved that a federal law governing the practice is finally in place, one observer says.

"This is the first federal legislation, and I think everyone would prefer a national law over a patchwork quilt of state laws that make it very difficult for anybody to comply," says Mark Rasch, senior vice president and chief security counsel at security service provider Solutionary and former head of the Department of Justice's computer crime unit.

CAN-SPAM also gives the Federal Trade Commission the authority to create a "Do not spam" registry, much like that agency's "Do not call" list that consumers can join to prevent calls from telemarketers. ■



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3Com-EDS deal in the works; mum on details

■ BY PHIL HOCHMUTH

3Com and Electronic Data Systems are working out the final details on a deal for

EDS to resell 3Com enterprise hardware products as part of the integration firm's services offerings.

With 3Com on EDS' menu, corporations

could tap the second-largest IT integrator (behind IBM Global Services) to install 3Com switches, routers and voice-over-IP equipment — and that includes gear from

3Com's joint venture with Huawei Technologies. IBM Global Services offers Cisco but not 3Com products.

Sources close to the deal say it is in the works, but spokespeople for 3Com and EDS would not discuss it.

Other enterprise vendors EDS partners with include Cisco, Dell, Microsoft, Sun and Xerox. Adding 3Com to its product mix might give users interested in EDS' services a less-expensive option for network equipment, observers say.

"It would be good for 3Com to ally itself

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Leaning on EDS

3Com hopes to ride EDS' clout into large enterprise IT project accounts.

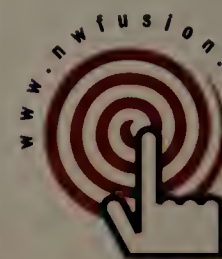
2002 revenue of top systems integration companies (in billions)



with a legitimate large-enterprise reseller," says Zeus Kerravala, an analyst with The Yankee Group. "Even if 3Com is billed as the de facto alternative [among EDS' service offerings], it still helps 3Com. I could see a situation where Cisco is sold as a high-end offering and 3Com is positioned as a more-value play."

3Com's bid to attract large enterprise customers began in March when it announced plans to form a joint venture with Huawei, China's largest maker of enterprise and carrier Ethernet switches and IP routers. Since then, the company has launched its Switch 7700, a chassis-based Layer 3 core LAN switch, and the Router 5000 series of aggregation routers. These boxes are targeted at Cisco's Catalyst switches and 2600/3700 series routers.

3Com has said that its joint venture with Huawei lets it offer routers and switches competitive with Cisco and Nortel, but priced about 10% to 20% less. ■



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Server mgmt. standard gaining steam

■ BY JENNIFER MEARS

As organizations move toward running heterogeneous servers as a single pool of resources designed to respond to business needs, a looming issue is how best to manage those disparate systems. The Intelligent

Platform Management Interface is a standard that industry observers say is becoming increasingly useful as organizations look for ways to streamline management and cut costs in the data center.

It's not exciting: IPMI deals with monitoring basic server parts such as CPU, fan, voltage and temperature. Analysts say it can help reduce costs by letting administrators remotely manage, diagnose and reboot servers whether the operating system is running or the system has crashed. It does it regardless of platform.

Users might have IPMI running on their servers and not even know it. Today, systems vendors for the most part do not actively promote the standard, although it increasingly is being embedded into servers, storage and other network devices.

"It's amazing how little is known in cor-

porate IT about IPMI," says Ulrich Seif, CIO at National Semiconductor in Santa Clara. "IPMI might be one of the least-known standards in the industry."

IPMI is a message-based hardware management interface that is implemented at the silicon level and uses a baseboard management controller, which is a small processor that sets up IPMI as a subsystem independent of the server's CPU or operating system (see graphic, page 22). It enables remote monitoring, management and recovery capabilities, regardless of the status of the server.

Dell, HP, Intel and NEC are behind the standard, which was created in 1998 to provide an alternative to the proprietary management tools each server manufacturer offers. In the past, IT managers had to use multiple tools to manage heteroge-

neous systems. About 150 vendors have adopted IPMI, which enables cross-platform management.

IPMI can be exposed through any standard management software interface such as Common Information Model, SNMP and Windows Management Instrumentation. It can feed into higher-level management software such as HP's OpenView.

Industry observers say the latest iteration of the specification might be what finally pushes it onto the radar screen of network executives. IPMI 2.0, unveiled at the Intel Developers Forum earlier this year, is expected to be ratified by its promoters by the middle of next year. It is the third iteration of the specification that took a giant step forward with its last update when it enabled management of servers via the

See IPMI, page 22

Takes

■ **Brix Networks**, a maker of appliances used to monitor network service quality, has received \$8.1 million in a fourth round of venture funding. The company, which has compiled \$55 million in funding since starting up in July 1999, says it will use the new influx to boost its sales and distribution system. The company's investors include Charles River Ventures and ComVentures. Brix is shooting for profitability next year. The company recently announced a reseller agreement with **Agilent Technologies** under which it will offer Brix's voice-over-IP hardware and software performance monitoring products to service providers. Brix also sells its products for enterprise networks.

■ **HP** is shipping Xeon versions of its 2-year-old **ProLiant BL20p blade servers**. The servers, which support up to two processors, also now will connect to Fibre Channel storage devices, according to HP. They are available in 2.8-GHz, 3.06-GHz and 3.2-GHz configurations. Although blade servers initially failed to meet market expectations, HP and IBM are beginning to sell the systems in greater volumes. HP says it has now sold more than 50,000 blades since launching its line in January 2002. Recent customers include Ag-Research, Telecomputing ASA and Hostopia.com, HP said. IBM says it has sold 42,000 blades since December 2002. Pricing for a single-processor 2.8G-Hz ProLiant BL20p with 512M bytes of memory and a 36.4G-byte hard drive starts at \$2,400. With the 2G bit/sec Fibre Channel card, it costs \$3,400.

Start-up manages storage with grids

Mix of servers, disks and WAN technology replicates data to remote sites.

■ BY PHIL HOCHMUTH

Start-up ExaGrid is looking to change the way businesses handle data backup and recovery with a grid-computing system for storage.

The company, which launched last month, has designed what it calls a Grid Protected Storage architecture: a mix of standards-based servers, disks, Ethernet switching and WAN technology fashioned into an end-to-end system for replicating data to remote sites. ExaGrid says its system is faster and more reliable than disk-to-tape or disk-to-disk back-up technologies.

The company's concept involves two basic hardware components. One is the GRIDfiler, a 1Tbyte Windows-based Dell server running as a network-attached storage appliance. These stackable servers connect via Gigabit Ethernet in a rack, which is managed virtually as a larger disk array. Gigabit Ethernet also connects the GRIDfiler racks to a LAN and to the other ExaGrid component, the GRIDdisk, which is a larger array of Linux-based servers.

GRIDdisks are the archive repositories in the system, and can be managed and configured virtually through ExaGrid's software. Local network storage would be configured on the GRIDfilers — such as shared drives on a LAN — and back-up jobs

PROFILE: EXAGRID	
Location:	Westborough, Mass.
Founded:	2002
Product:	Grid Protected Storage system, based on standard PC hardware and software, plus proprietary management software.
Key personnel:	CEO Jim Pownell and CTO Dave Therrien, both formerly vice presidents at now-defunct StorageNetworks.
Funding:	\$8.5 million Series A funding from Highland Capital and Sigma Partners.

would be scheduled incrementally to the GRIDdisk arrays. The company says its hardware also can be controlled through other storage and back-up management software from vendors such as Legato Systems, Oracle and Veritas Software.

Off-site back-up jobs also can be configured among GRIDdisk arrays at remote sites over a company's existing WAN connection. By backing up only data that changes among remote GRIDdisk arrays, bandwidth is conserved, according to ExaGrid CTO Dave Therrien.

Because backups are written to disk drives, recovery of data is 80% more accurate and up to 1,000 times faster than data recovery using tape drives, he says. A patent pending data checksum tech-

nique is used to ensure that no corrupt data is archived, Therrien says.

Founded in 2002, ExaGrid is backed by venture capital funding and says it has several early customers using its product, including the medical imaging department at Boston's Massachusetts General Hospital and The First Years, a Massachusetts-based manufacture of baby products.

Grid Protected Storage will be delivered as a whole system — racks of GRIDfilers and GRIDdisks, with network hardware included — or users will be able to buy their own hardware and integrate the ExaGrid software.

The company plans to start general product shipping next year. Pricing has not yet been determined. ■

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WIRED
WINDOWSDave
Kearns

We don't need new technology; we need to use the technology we have better.

I just got off the phone with a technology support operation. As most of you know, the automated telephone systems are built by specialists who go to college to learn how to design "menu choices" that don't relate to the real-world problems you are trying to solve (press "1" if your telephone handset is no longer operational).

This is supposedly state-of-the-art technology to route your call most efficiently. While many calls can be handled auto-

Calling for real tech support

matically (account balance, due date, appointment status, nearest office and so on), most of my calls don't fit those descriptions (I use the automated Web services for those). I've got two gripes having to do with a technology that isn't in the least bit "state of the art": caller ID. Most businesses use a telephone number as an index into the accounts database.

My first gripe is that I have to sit in the phone queue listening to some automated voice tell me how long I have to wait ("wait time is currently 10 minutes or more"). You've got my phone number, just call me back when the wait time is up! The inexpensive handset on my desk can auto-dial the last caller (or any of the phone numbers I've captured with caller ID), and so can your business phone system. You've automated the phone to save you time; now think about my time.

Somewhere during the maze of menu

choices the automated voice will say "In order to serve you better, please enter your 77-digit account number."

So you do, but you have to do it four times because you always mis-key a number or two. Then, 20 minutes later, when a human picks up the phone the first thing they ask you for is the account number.

Ten years ago I was writing applications that captured the phone number, looked up the account, forwarded the call (via the phone switch) to a technician while routing the account information to the tech's desktop PC. Pick up the phone, and the account details appear on screen. That was 10 years ago. Yet no one seems capable of doing that today.

When I'm frustrated enough to call tech support, don't add to my frustration. Use the technology for my good, which actually could improve your bottom line.

Kearns, a former network administrator, is a freelance writer and consultant in Silicon Valley. He can be reached at wired@vquill.com.

Tip of the Week

I'll be deciding on 2003's Networking MVP (see www.nwfusion.com, DocFinder: 8728) over the next few weeks. If you have an opinion on who has done the most to further their organization's network agenda this year, drop me a note. The award will be announced in the Jan. 12 column.

Radvision updates videoconferencing appliance

■ BY PHIL HOCHMUTH

Radvision last week announced new versions of its IP videoconferencing appliance that can be used to add ISDN or IP videoconferencing to an enterprise network, with support for up to 10 or 20 simultaneous users.

The Radvision Invision appliances, the Invision 100 and 400, are 1U appliances that can support videoconferencing setup and management, and IP gateway features in one box.

The appliances can be used to set up videoconferencing for up to 20 users, with each conference participant receiving up to 768K bit/sec of video bandwidth. The Invision 100 supports up to 10 users, while the 400 model supports 20.

Both appliances can support ISDN videoconferencing protocols, such as H.320, and H.323 video protocol and voice over IP. The appliances also support Session Initiation Protocol, although it is not a standard configuration.

The hardware includes up to four Basic Rate Interface or two Primary Rate Interface ISDN connections.

An H.323 IP gateway is embedded in both devices.

The devices also have a built-in management interface, which can be used to schedule and manage videoconferencing activities. This Web-interface also can be used to monitor network activity and performance.

Both the Invision 100 and 400 are priced starting at \$44,500. ■

IPMI

continued from page 19

network. To get IPMI capabilities, administrators previously had to be working on the system itself or connecting through a serial port, says Steve Rokov, director of marketing at OSA Technologies, which makes IPMI software and firmware.

"This offered a way to extend accessibility over the LAN," Rokov says. "So administrators could be at the farthest reaches of the enterprise and could still monitor and manage their servers."

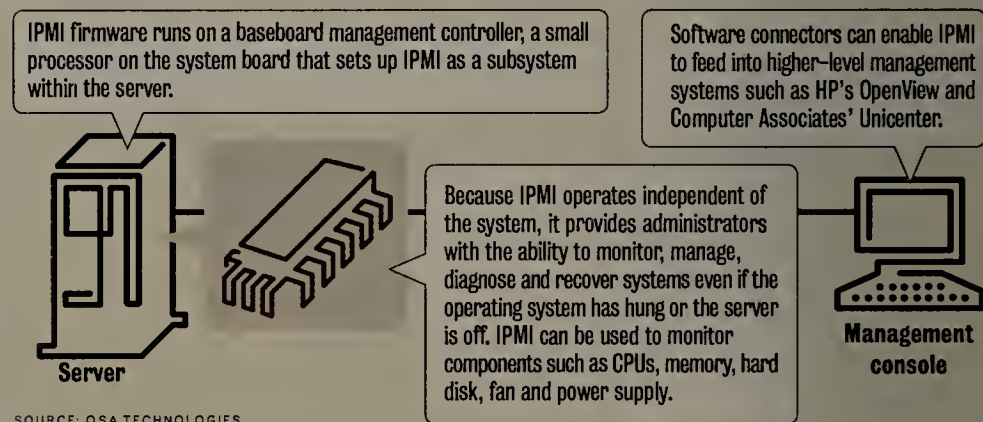
But security issues dogged some IT managers who implemented at the specification. IPMI 2.0 addresses security concerns, Rokov says. It supports encryption and requires authentication before allowing access to the baseboard management controller. IPMI 2.0 also supports virtual LANs (VLAN).

"Like Rosettanet/XML-enabled transactions on the business application side, IPMI provides a standardized interface to the 'vitals' of a system. Support of encryption [Advanced Encryption Standard] and authentication [via SHA-1] together with VLAN capability now add the right feature set to allow an administrator to leverage the IPMI functionality securely over the network," National's Seif says. "All these capabilities will be embraced by administrators. Who wouldn't want to remotely and securely administer a server in trouble?"

Jonathan Eunice, president and principal analyst at Illuminata, says IPMI is letting

Under the server cover

The Intelligent Platform Management Interface (IPMI) provides a standard way to monitor servers regardless of platform.



SOURCE: OSA TECHNOLOGIES

companies such as Amplus, a server management software company, create cross-platform server management consoles. But he questions where IPMI will play as vendors get more serious about managing heterogeneous systems.

"I don't think IPMI is sufficiently rich and complete to be the end-all of server management, much less the broader field of IT infrastructure management," he says. "Most OEMs creating server coordination platforms — HP with Systems Insight Manager or IBM with IBM Director, for example — have to use additional or other instrumentation mechanisms, both for basic operations like software distribution and platform monitoring, and for higher-level operations like partition/[virtual machine]

management and [quality-of-service]-based provisioning.

"IPMI is one of dozens of platform-level standards with which the vendors must concern themselves, but it doesn't work at a high enough level that most IT managers, architects, or decision-makers need to think about it very often, if ever," he says.

Aberdeen Group analyst Peter Kastner says IT managers should start paying attention to the standard. In a white paper on standards-based computing published in August, Kastner wrote that about half the cost of running a data center today is associated with paying the people who operate and administer the systems. IPMI-enabled devices would help reduce those management headaches, he says.

"With more than 150 adopter companies, IPMI support should be a checklist requirement by IT managers when evaluating server infrastructure," he says. "IPMI helps enable management software that works across heterogeneous server system hardware."

According to OSA Technologies, 30% of all servers shipped worldwide have IPMI, and the numbers are predicted to be at 70% by year-end 2004. ■

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Tackling app performance mgmt.

Research shows IT managers need to start building better application management into their infrastructures.

■ BY DENISE DUBIE

It used to take Michael Lubanski up to 30 hours trying to pinpoint the source of poor application performance in Towers Perrin's benefits administration application. Now the process can take less than 30 minutes.

The time-saver, Lubanski says, is software called RealTea from TeaLeaf Technology that captures application traffic in real time and shines a light on the cause of poor performance — whether an application or a

Web server, load balancer, middleware or another piece of the complex environment supporting online applications.

"We used to just pick a place and start digging, but the software gives us the point of view of the application and eliminates the problem of us not seeing the problem," says Lubanski, manager of enterprise monitoring at the human resources consulting and benefits administration firm in Philadelphia.

Lubanski's problem is a common one. A recent study shows that IT managers spend about 30% of their workweek managing applications. The same report also shows that about 30% of application performance problems cannot be identified or resolved within a day. Wily Technology, a maker of application performance management (APM) software, conducted the survey of 360 IT managers, which says the causes of poor performance are varied (see graphic, right).

The good news is that a flood of new vendors and products emerged in the past year to tackle application performance problems. Research from APM Advisors, a new market research firm in Portland, Ore., reports more than 100 companies now offer APM hardware and software in nine product categories, which range from software products that collect information to network appliances that speed application traffic.

The company attempts to make sense of the products and how each addresses a different aspect of APM in a recent paper that says enterprise IT managers need to build application-aware infrastructures.

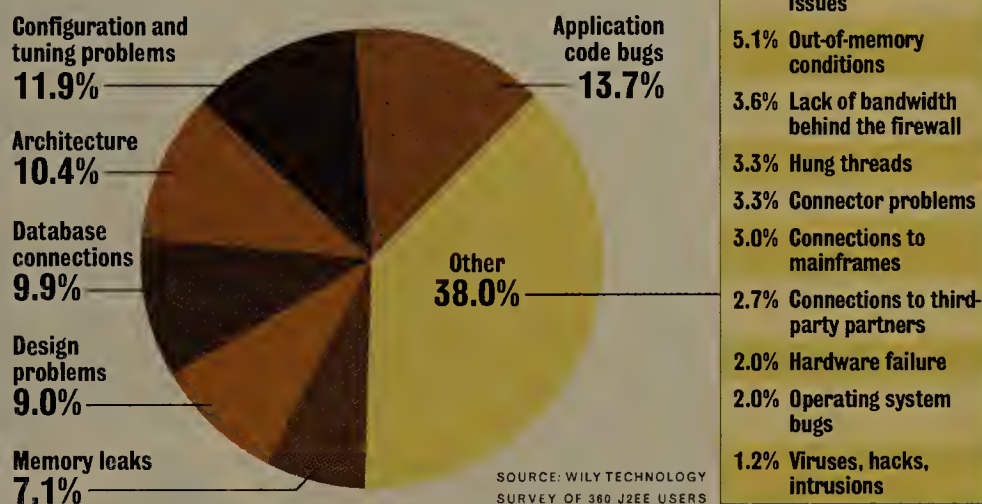
"IT managers can't afford to keep overlaying tools to get a handle on application performance," says Lynn Nye, president and founder of APM Advisors. "Application management has to be part of the infrastructure; it can't be an afterthought or solved with disparate products placed on top of the infrastructure."

Nye says APM products today provide information through passive data collectors and to some degree control with load-balancing and traffic-management software. Resolving application performance degradation involves collecting data from multiple sources, usually through the use of software agents on servers and network probes, and correlating the information to find the common behavior patterns. Yet

See APM, page 26

Cause and effect

IT managers in a recent survey indicated numerous causes behind application performance degradation.



Short Takes

■ **NetPro Computing** last week released Version 3.0 of its **DirectoryLockdown tool** for Microsoft's Active Directory. The tool monitors the Configuration and Schema Naming Contexts in the directory and prevents unauthorized changes. This can protect companies against denial-of-service attacks, security breaches and service interruptions. Companies can set the software to shut down the directory if a breach is detected or to send an alert to an administrator. NetPro also includes a module so the tool can plug into Microsoft Operations Manager, a network-monitoring tool. The software supports Windows 2000 and 2003. Pricing starts at \$9 per user.

■ **Cafésoft** has shipped **Cams Apache 2.0**, which supports single sign-on security across Apache 2.0 Web servers. The software works with a farm of Apache servers or between Apache 2.0 and other Web and Java 2 Platform Enterprise Edition-based servers. Cams works with Lightweight Directory Access Protocol v3-compliant directory servers and SQL databases. The software features role-based access control, centralized security policy administration and logging capabilities. Pricing starts at roughly \$3,000 per server.

Olympic net gets gold security protection

■ BY ELLEN MESSMER

Imagine spending three years and millions of dollars to plan a campus-style LAN for 10,500 PCs and 900 servers, knowing it would only be in place for three weeks, with thousands of TV and magazine reporters watching to see if it works?

That's what SchlumbergerSema has taken on as the IT systems and security integrator for next summer's Olympics in Athens, Greece.

SchlumbergerSema, which is working with Greek telecom operator OTE to build an IP-based network for the Olympic

Village, is in charge of the security system based on bar-code badge readers to keep track of the 200,000 athletes, coaches, sports media and volunteers given admittance to authorized venues and buses. There are more than 3,000 IT personnel working with SchlumbergerSema (350 are SchlumbergerSema employees) to ensure 200 Cisco routers, 1,600 Cisco switches, 24 Check Point firewalls and 120 intrusion-detection systems (IDS) from assorted vendors are properly installed well before the games begin.

"Our job is to protect the information and data resources, which includes the list of competitors and information on family members coming to the games," says Jean Chevallier, vice president at SchlumbergerSema. The database of information on 200,000 people also will contain sensitive passport information and medical records.

Reporters covering the Olympics will use PCs and kiosks on the network to get competition results, historical information and background on the competitors that will be stored in Unix, Solaris and Windows NT servers. Although the PCs and servers will have anti-virus software from Computer



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See SchlumbergerSema, page 26

'NET
INSIDERScott
Bradner

Is there a viable business model for commercial ISPs in an end-to-end Internet? Telephone carriers looking forward to an Internet-based future don't seem to think so. Instead, the carriers are looking for ways to be in the loop as content or services providers.

But there might be other options.

A purist's Internet is an end-to-end service. You set up a service, while I access and use it. Maybe I pay you for using it. As long as I use standard Internet protocols no ISP between you and me knows that you are offering the service, that I'm using it or that I'm paying you to use it.

No ISP gets part of whatever fee I'm paying you. I pay my ISP for Internet connec-

tivity, and you pay yours for Internet connectivity. If there are other ISPs in between they do not receive any specific chunk of the money we pay to our ISPs. Our ISPs might buy connectivity from them, but the fee for that connectivity does not change based on what our ISPs collect from us. So ISP service is basically a commodity, and it's hard, although not impossible, to make money selling a commodity.

It costs a lot to build an ISP, particularly one that can offer very high-speed service. That takes fiber-optic cable, and fiber is expensive to buy and install. Customers, especially residential customers, are reluctant to pay enough to make installing such networks economically viable.

There is an alternative to the carriers installing the fiber themselves that is getting more popular and might get even more so depending on the outcome of an upcoming Supreme Court case.

If carriers cannot afford to put in fiber or are unwilling to do so because they don't

think customers will make it worthwhile, then why not have someone else install the fiber and lease it to ISPs? The Nov. 17 *New York Times* carried a story about plans by 18 cities in Utah to install a fiber infrastructure called UTOPIA (Utah Telecommunications Open Infrastructure Agency) that would reach 248,000 households and 34,500 businesses (see related story at www.nwfusion.com, DocFinder: 8725). A lot of other municipalities would like to do the same, but this concept caused the phone companies to pull a nutty and get laws adopted in 10 states so far that block governmental entities from competing with local telephone companies.

The legality of such restrictions is now in front of the U.S. Supreme Court as *Nixon v. Missouri Municipal League*. Arguments in the case are scheduled to be heard Jan. 12. Information on the case can be found at DocFinders: 8726 and 8727.

The California "One Gigabit or Bust Initiative" represents another type of effort.

This is an effort to fiber up every educational institution, business and home in California by 2010. As a non-governmental project it does not have the same legal issues, but still would create an infrastructure instead of waiting for the phone companies to do so.

The background studies for the California project foresee very large returns to society for installing very high-speed networks, but not enough of these returns would flow to the carriers to make it possible for them to do the job on their own. A related question is: What value do the phone companies bring to the table in this case? You can guess my answer to that.

Disclaimer: At least some people think Harvard has value (in addition to its endowment), but this guessing game is mine.

Bradner is a consultant with Harvard University's University Information Systems. He can be reached at sob@sobco.com.

APM

continued from page 25

until recently most APM tools used for performance monitoring, application acceleration and systems management worked independently.

Products such as Packeteer's PacketShaper, which associates IP addresses and conversations to identify and manage flows between resources, now includes compression technology (which speeds application response time and delivery).

The company also developed Secure Sockets Layer acceleration technology, which while now packaged separately, could become part of the Packeteer's flagship products. Companies such as Fineground Networks, NetScaler and Redline Networks also cache and speed application content to improve response time.

The trend is to attack application performance with a variety of technologies installed across the infrastructure, yet working together toward the same goal. While network appliances can watch traffic between resources, Nye says software on servers and desktops is the best route to take when preparing a network for application management. New companies such as Cerberian, which provides Web-filtering capabilities, work to incorporate the end-user perspective into the overall performance rating of an application.

"Putting in software, whether it's turned on on every desktop or not, is far less expensive than putting hardware in every remote location," Nye says. APM Advisors' vision of an integrated APM infrastructure is just emerging as enterprise IT managers continue to slowly chip away at their APM problems.

APM software gave Towers Perrin's Lubanski the perspective he couldn't get by cobbling data collected by network and systems management tools together. He's

enjoying success with the TeaLeaf software managing one application. His company, which supports about 10,000 employees across 90 locations and welcomes more than 1 million users to its Web site, will need to roll out the TeaLeaf software to get perspective on multiple applications and predict their behavior.

Lubanski used to rely on synthetic tests, or scripts that make requests to an application and act as an end user might, to gather information on how an application behaves. However, the speed with which Web applications process information and the lack of "real" data being delivered caused him to try TeaLeaf.

"As more and more apps came onboard and the more things went live, we realized the scripts only tested a single function. There is too much going on behind the app to test function by function," he says. By integrating TeaLeaf into NetIQ's AppManager, Lubanski says he hopes to prevent the event storms that result when multiple systems start alerting on the same problems. "The next big thing is event correlation," he says.

Christopher Soto started to address APM on his company's Oracle applications. The Oracle e-business database administrator at Murad, a skincare product maker in El Segundo, Calif., uses Foglight from Quest Software to monitor the Web servers and databases supporting Oracle applications and an e-commerce Web site.

In the past, Soto says he would have to check event logs on Web servers, application servers and databases to try to pinpoint the source of Oracle performance problems. Foglight helps use one console to spot potential problems.

"There are so many different pieces that it is nearly impossible to proactively monitor every single piece all the time," Soto says. "[APM] software can help you figure out what piece to look at first." ■

SchlumbergerSema

continued from page 25

Associates and other vendors on them, SchlumbergerSema is taking many steps to be able to respond to worms and network attacks, should they strike.

The main way to stop these potential attacks is through CA's eTrust Command Center, which can keep an audit trail of network activity and collect input from the firewalls, IDS, anti-virus software and other security protections to prioritize security-related events.

"The most complicated part is the use of the centralized event tracking and the correlation tool, which helps make decisions," Chevallier says. Use of the eTrust Command Center is expected to give the IT department at the Olympics data center a way to correlate information collected from routers, servers and IDSs to identify a possible network attack, virus or compromise.

"We're positioning thousands of probes

in the network to send information to eTrust," Chevallier says.

Testing of the Olympics intranet equipment recently started at SchlumbergerSema's Technical Operations Center in Athens.

At the last Olympics in Salt Lake City, where SchlumbergerSema was the top systems integrator, a barrage of network attacks came from the Internet, Chevallier says. "In Athens, thank God, we have managed to convince everyone to isolate the games network from the Internet," he says. "It's a closed network."

Phillippe Verveer, technology director for the International Olympic Committee, which selects the IT vendors for the games, says that the Olympics has managed to ward off network attacks over the years that the public hasn't always heard about at the time. "In Albertville in '92 we had someone trying to take down the network, but because we had back-up there was no impact." ■

Olympian effort

The network for next summer's Olympics in Athens comprises:

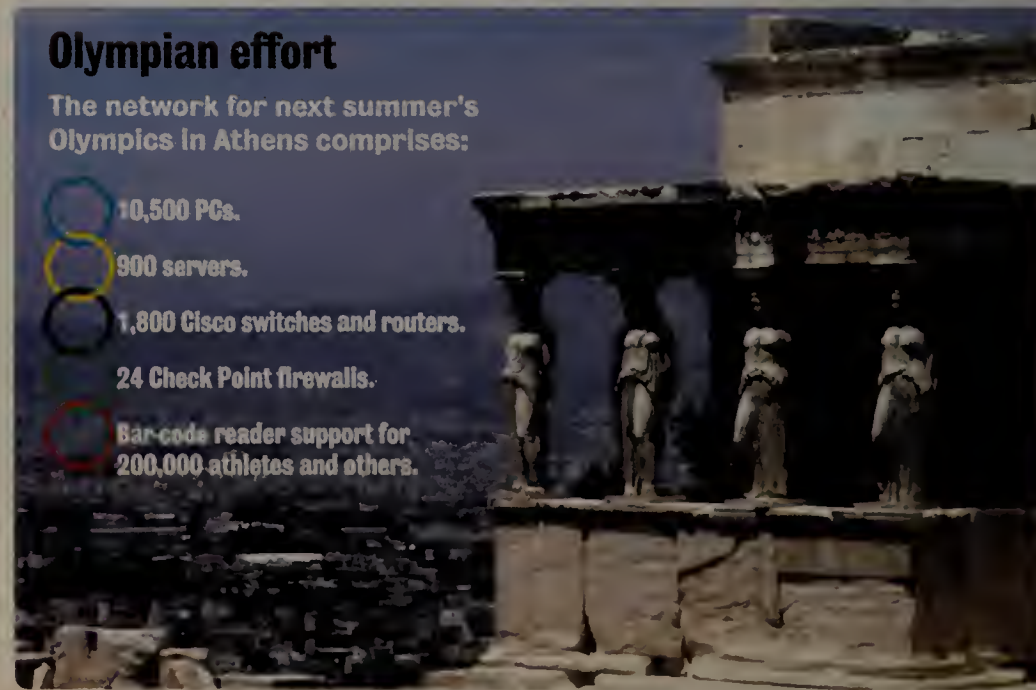
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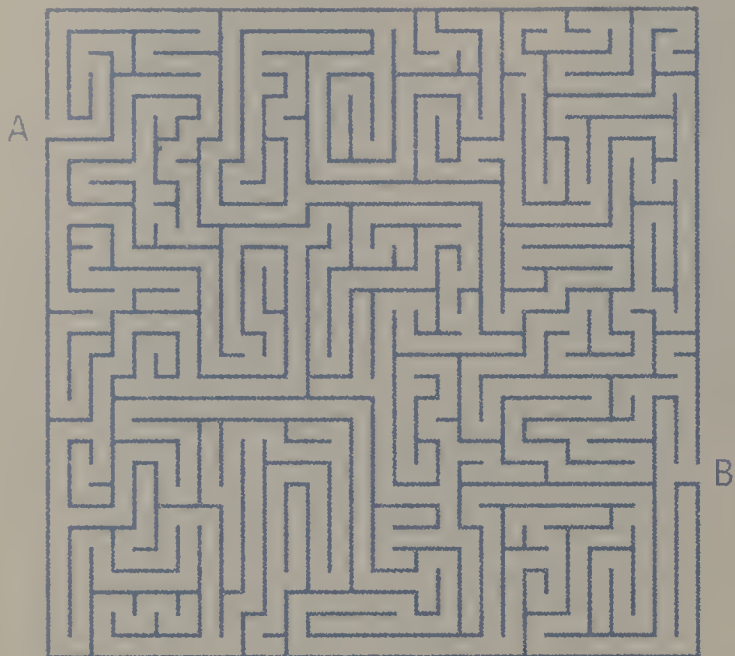
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Short Takes

■ **AT&T** inked a multi-million dollar deal with athletic footwear retailer **The Finish Line** last week. The three-year contract includes local and long-distance voice, frame relay and Internet access services across the country. AT&T is connecting The Finish Line's headquarters in Indianapolis with 500 retail stores across the country. The Finish Line was using voice services from MCI and other regional carriers, but now is consolidating all of its telecom service needs into one contract with AT&T.

■ In the first phase of a two-phase rollout, **Verizon** will turn up a **"non-QoS" voice-over-IP service** for consumer DSL customers in the second quarter of 2004, the company says. The second phase will be a managed service offering over DSL and T-1 access lines for residences and businesses in the fourth quarter of 2004. Analysts say Verizon's VoIP services are intended to defend its turf against cable companies offering voice and are an alternative effort to retain customers vs. primary access lines. Some regional Bell operating companies, such as SBC, fear that VoIP would present a threat to their ability to retain access line revenue by offering consumers yet another technology alternative to the traditional plain old telephone service line into their homes.

■ **Verizon** plans to purchase an additional 220 Multi-protocol Label Switching-enabled routers as part of a nationwide network buildout to crack the large enterprise market. Verizon already deploys 80 such routers in its network, which provisions IP VPN services to large companies under the carrier's **Enterprise Advance** initiative. Cisco, Juniper and Redback Networks supply routers to Verizon. The RBOC has landed 900 contracts with more than 550 of its largest customers since unveiling Enterprise Advance a year ago, the company says.

Q&A

AT&T's Eslambolchi talks IP



Hossein Eslambolchi is in the unusual position of holding three executive roles at one of the largest U.S. companies. A 17-year AT&T veteran, he is president of AT&T Labs, CTO and CIO. Eslambolchi says the hands-on experience gives him the diversity of knowledge needed to look ahead to next-generation

technology and the operational know-how to reduce costs. He recently spoke with Network World Senior Editor Denise Pappalardo.

MCI has maintained for years that it has the largest IP backbone. But AT&T makes the same claims. Can you explain?

We have the largest IP network in the world. AT&T transports about 1,200 terabytes of data per day on our IP network. That's 1.2 petabytes per day. We have more than 5,000 points of presence. Each day we transport 10 times as much data as voice traffic. We transport about 4.4 petabytes a day of high-speed data including IP, ATM, frame relay and private line. Compared to voice, where we transport 450 terabytes of traffic per day.

MCI keeps saying it's connected to more autonomous systems or other IP backbones. They also talk about the number of endpoints connected to the network, but those measurements are not sufficient. How much traffic you generate is a more important point.

Why should it be important to a business user if AT&T, MCI or someone else has the largest IP network?

Because the largest IP provider can directly reach more points on the Internet, therefore bringing business users closer to content and also bringing the larger Internet closer to their content. We have 4 million business customers. We're partnering with six of the largest cable companies to support their IP traffic.

Isn't quality and reliability a bigger factor for customers?

About three years ago reliability of the network was nowhere near the reliability of the public switched telephone network. We were at about 99% reliability, which is extremely poor. Over the last two to two-and-a-half years, we've worked very closely with our vendors. We've taken them to AT&T's school of reliability. When they graduate they're at 99.99% reliability, which is like a college degree.

What does 99.99% reliability mean to a user?

In determining the reliability of a network you look at the number of defects per million. For example, if a port is available for 1 million hours and it experiences 100 defects in that time, we say it has 100 DPMs. That's equivalent to 50 minutes of downtime for every 1 million hours.

When will the IP network have the same reliability, 99.999%, as AT&T's other data services?

It may take another 12 to 24 months to reach that level. Five nines of reliability is what we're shooting for. A network with 99.999% reliability means it experiences 10 DPM, which is equivalent to a maximum of 5 minutes of downtime every year. At five nines the network is ready for mission-critical applications.

AT&T is consolidating its networks to one IP backbone. What are some of the key steps?

The plan is to deploy multiservice switches, which will support Layer 2 and Layer 3 services, in the network in the first quarter. We'll deploy 80 switches over a period of time. ... There is a lot of complexity at the edge of the network, and this is where the battleground is. We've been building the systems to support this multiservice edge. We've also been working on creating an aggregator box called a multiservice aggregator [MSA]. This device will take all traffic in from the edge and deliver it as IP over Ethernet.

Where would these aggregators be deployed?

We have 6,400 buildings directly connected to our local fiber network. These aggregators could be deployed at all of these sites. The IP to Ethernet MSA will hit the multiservice edge switch, which will then connect directly to our MPLS network or our intelligent optical network.

How is AT&T aggregating traffic today?

We use multi-service platforms from Lucent and Cisco. Both take traffic from the edge. The only difference is that each use TDM over SONET. That's still a little inefficient, but that was the best technology available at the time.

So what's the benefit of IP over Ethernet?

I want to move IP farther into the network to get better statistical multiplexing. It will require few service-specific devices, which will reduce the management complexity of the network and also reduce capital expenses.

This platform lets AT&T ditch frame relay and ATM-specific gear?

Yes. The point I'm trying to make is that a T-1 is a T-1 is a T-1. The only thing that differentiates a T-1 is the protocol that runs over it. We want to move the industry away from controlling these services with different boxes to controlling them with software. This will allow you to change a frame relay T-1 to IP by using a different software module.

Are there MSA products out now that meet AT&T's needs?

We're in the request-for-information and request-for-proposal process. We're narrowing down the number of vendors to about five. And then we'll narrow it down to two vendors and start testing in the first quarter. Everything becomes packet end-to-end, eventually eliminating TDM.

If TDM isn't used to transport traffic, what will be used?

Next-generation fiber optics is moving toward a photonic infrastructure, which will eliminate the need for electronic cross-connects. Instead, it uses mirrors to direct traffic.

See Eslambolchi, page 31

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EYE ON THE CARRIERS

Johna Till Johnson



There's something to be said for worrying about the cloud

I was recently asked to moderate a panel discussion at the Executive Council of New York on the topic of Security and Business Continuity. One of the keynote speakers was William Pelgrin, director of the New York State Office of Cyber Security & Critical Infrastructure Coordination. Created in response to the Sept. 11 attacks, CSCIC coordinates private and public cybersecurity initiatives in New York, and is actively sharing best practices with the other 49 states.

It's a great initiative (and I'm not just saying that because I'm a New Yorker). The goal of better securing network infrastructure and services is laudable by itself. But it's how CSCIC is going about the process that's unusual: actively recruiting participation by private companies, including key infrastructure and service providers and businesses that are vulnerable to cyberthreats — and then listening to them. (When was the last time government agencies listened to you?)

What motivated me to write this column was a comment that Pelgrin made about the dangers of assuming too much about network infrastructure. In a previous role as a non-technologist heading up the New York state Office for Technology, he often asked his team to explain infrastructure components. Too often, they would draw the network as a series of clouds, with no detail. When he asked what that cloud consisted of, they'd tell him, "Oh, that's the network. We don't need to worry about it. It's always there."

Well, in the attacks of Sept. 11, New York lost 2,250 telecom circuits, knocking out service to companies all around New York. Pelgrin concluded: "We need to worry about the cloud."

He's absolutely right.

But worrying is only helpful if it's constructive. What can IT executives do to ensure that their critical network infrastructure is protected against attacks? Some recommendations:

- **Get engaged.** Companies based in New York can contact CSCIC to find out more about best practices for network security and to learn what their infrastructure providers are up to. As noted, other states are beginning to work with New York to share best practices, so non-New Yorkers should contact the technology departments for their state governments and find out what they're up to.

- **Invest.** A recent Nemertes Research survey uncovered the nerve-wracking fact that virtually all companies are substantially underinvesting in security initiatives. The average investment was 3% of the overall IT budget, well below the best practices of 5% minimum or the 10% that a handful of leading-edge firms are investing.

- **Share your pain.** Make sure all your suppliers, including telcos, understand that sharing their security strategies, tactics and practices is a requirement for doing business with you. As noted in previous columns, it's best to bring this up when they're likely to listen: during contract negotiations or renegotiations. When there's money on the table, it's surprising how well telcos listen.

- **Keep me posted.** Please share the challenges and successes of your network security initiatives — a solid body of best practices is the best way to avoid making dangerous mistakes.

Johnson is president and chief research officer at Nemertes Research, an independent technology research firm. She can be reached at johna@nemertes.com.

dollars with the ILECs, which is high-octane profit for these guys. The second problem is the local connection is still a bandwidth bottleneck. Third, there is little way to differentiate your network at the local level.

What is AT&T doing to solve those problems?

We're trying to expand our footprint using local infrastructure. To bypass access today we get [unbundled network element-platform] from the ILECs. But we're looking at all types of technologies that will allow us to bypass the ILECs all together. We're checking out power line, 802.11, fixed wireless and free space optics technologies. For many businesses fiber is the only answer, but we're checking out all methods to drive down local access costs. ■

Eslambolchi

continued from page 29

A lot of companies tried this in the past and it didn't work. But the new technology coming up over the next three to five years will allow you to move from an electronic to a photonic infrastructure. We've also been working on long-haul and ultra-long-haul technologies that allow us to manage wavelengths between two cities without the need for regeneration.

You've talked about the need to eliminate AT&T's dependency on incumbent local exchange carriers. What are the biggest problems there?

Access is where the highest level of cost is for us. AT&T spends billions of

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A black and white photograph of a person rock climbing a steep, layered rock face. The climber is wearing a t-shirt, shorts, and a harness, and is secured by a rope. The background shows a vast, open landscape under a clear sky.

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Technology ^{update}

■ AN INSIDE LOOK AT THE TECHNOLOGIES AND STANDARDS SHAPING YOUR NETWORK

LWAPP brings harmony to WLANs

■ BY JEFF AARON AND PAT CALHOUN

Centralized security and management of wireless LANs is a rapidly growing trend in which a WLAN device such as a switch, appliance, or router is used to create and enforce policies across many streamlined, or lightweight, radio access points.

As is the case with any network technology, standardization is key to widespread adoption. More specifically, a standardized protocol is required that governs how WLAN system devices communicate with lightweight access points to ensure interoperability and to avoid having to buy from only one vendor.

This is the role of the Lightweight Access Point Protocol (LWAPP), a draft standard the Internet Engineering Task Force is considering as part of the Control and Provisioning of Wireless Access Points (CAPWAP), which is in the preliminary stages of becoming an IETF working group.

Traditional WLANs function on a stand-alone basis. As such, they are based on a device known as a fat access point, which contains all wireless processing capabilities. This traditional architecture doesn't let different vendors' equipment interoperate. The new, hierarchical WLAN architecture departs from this model.

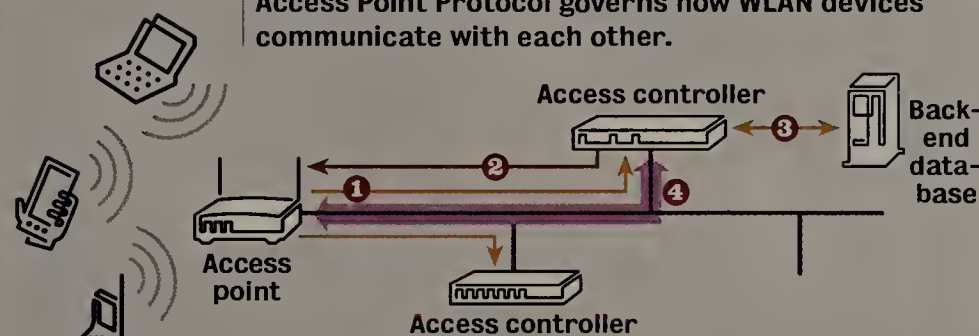
LWAPP's goal is to provide consistent behavior across WLAN devices, ensure multi-vendor WLAN interoperability, protect WLAN hardware investments and create a foundation for delivering advanced WLAN functionality in enterprise environments. LWAPP helps companies simplify WLAN deployment and management, and build large-scale wireless networks.

An LWAPP-managed network consists of

■ HOW IT WORKS

LWAPP

Emerging WLAN architecture shifts functionality from the access point and centralizes intelligence within the access controller, or WLAN switch. The Lightweight Access Point Protocol governs how WLAN devices communicate with each other.



- 1 Access point sends out discovery requests.
- 2 Best available access controller verifies access point and provides WLAN configuration information (SSIDs, security policies, etc.).
- 3 Access controller gets user authentication credentials via back-end database.
- 4 LWAPP handles data encapsulation, fragmentation and transport across WLAN.

multiple access points connected via Layer 2 (Ethernet) or Layer 3 (IP) to an access controller. Access controllers typically are WLAN appliances or WLAN switches. With LWAPP, access points are essentially remote radio frequency interfaces that no longer house all the mandatory wireless processing capabilities and are controlled by the access controller.

LWAPP governs how access points and access controllers communicate with each other by defining the following activities:

- **Access point device discovery and authentication** — When an access point is plugged into a wireless network, it uses LWAPP to discover available access con-

trollers. After the access point is certified as a valid network device, it associates with the best available WLAN switch/appliance.

- **Access point information exchange, configuration and software control** — The access point is updated with the most recent software load and configured with appropriate WLAN system information, such as Service Set Identifiers, channel assignments and security parameters.

- **Communications control and management between access point and wireless system devices** — LWAPP handles packet encapsulation, fragmentation and formatting of data being transferred between access points and access controllers.

LWAPP has several practical benefits for enterprise environments. By reducing the amount of processing within an access point, the LWAPP specification lets the limited computing resources on the access point focus on wireless access, rather than filtering and policy enforcement. The protocol centralizes traffic handling, authentication, encryption and policy enforcement (quality of service and security) capabilities within the access controller, improving the effectiveness of WLAN management.

LWAPP also improves WLAN security because it provides a generic and secure encapsulation and transport mechanism for multi-vendor access-point interoperability, either by means of a Layer 2 infrastructure or an IP-routed network.

Finally, LWAPP lets network administrators use an array of interoperable access points and wireless system devices from multiple vendors. As a result, they can make purchasing decisions based on the functionalities of individual access points and access controllers rather than simply buying gear from the same product line as a matter of necessity. This is also expected to drive down access point pricing.

LWAPP is expected to move to a working group within the IETF in the first half of next year. Standardization is projected to take approximately 18 to 24 months, but early vendor implementations exist today.

Aaron is senior manager of product marketing at Airespace. Calhoun is CTO of Airespace and one of the co-authors of the LWAPP protocol. They can be reached at jaaron@airespace.com and pcalhoun@airespace.com, respectively.

Ask Dr. Internet

By Steve Blass

Our Microsoft Access database is growing rapidly and getting harder to share effectively. Our IT team said we can use table space in a central MySQL-DB database. Can we still use Access at the desktop to work with data in a MySQL database?

To use Access as a client for a centralized SQL database you can establish a link to the central database by configuring an Open DataBase Connectivity (ODBC) data source to handle the con-

nections. The driver required for Microsoft SQL databases is usually available without installing additional software on your PC. To connect to a MySQL database install the Connector/ODBC software from www.mysql.com. After you download and install the Connector/ODBC driver, configure an ODBC data source for the MySQL database through the data source selection in your PC's control panel. Once the ODBC data source is set up, open Access and choose Open from the

File menu. Choose "ODBC databases" from the "Files of type:" options and pick out the MyODBC data source you configured from the "Machine Data Source" tab in the selection dialog. Follow the instructions in the manual from mysql.com to export your Access database into MySQL.

Blass is a network architect at Change@Work in Houston. He can be reached at dr.internet@changeatwork.com.

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GEARHEAD INSIDE THE NETWORK MACHINE

Mark
Gibbs



This week we will wrap up some of the technical delights of how VMware works and conclude with a higher-level look at where this product fits into IT operations.

On the technical side, one thing we haven't covered is what it takes to run VMware. Because all the virtual machines are sharing the same processor there's no such thing as too many cycles. VMware recommends you have at least a 500-MHz processor. We found that a 2.4-GHz Pentium 4 provided excellent performance.

There are a few processors not supported by VMware, including the Transmeta Crusoe (see www.nwfusion.com, DocFinder: 6730), because they don't implement "certain processor instructions."

If you're going to run a bunch of guest operating systems you will need lots of memory. If your host operating system is Linux you will need at the very least 64M bytes (in reality 192M bytes is more practical) plus whatever the minimum require-

Beware . . . there's more VMware!

ments are for each guest operating system running simultaneously. We ran VMware with 2G bytes of RAM and we were comfortable. The maximum memory that VMware can allocate to an individual virtual machine is 1G byte.

Obviously, you will need a graphics adapter, and VMware recommends a 16-bit display adapter. But you can squeeze by with anything greater than an eight-bit adapter. An additional requirement for Linux hosts is an X server such as XFree86 that meets the X11R6 specification.

Basic installation requires disk space, and you will need 100M bytes for Windows hosts but only 20M bytes for Linux hosts. You also will need at least 1G byte of disk space for each guest operating system (the actual disk space needed will be roughly the same as the normal requirements for installing and running each guest operating system and its applications). For VMware's list of VMware Workstation requirements see DocFinder: 8731.

VMware also offers enterprise and data center-oriented products with GSX Server and ESX Server, which support partitioning and isolation of server resources with remote management and automatic provisioning.

Designed for large systems, VMware GSX

Server runs on Windows 2003 Server, Web, Standard and Enterprise Editions, Windows 2000 Server, Advanced Server and Datacenter Server, and Windows NT Server 4.0. It supports up to 64G bytes of host memory, 32 host processors and 64 powered-on virtual machines, along with up to 14 virtual SCSI devices and shared cluster virtual disks up to 128G bytes in size.

Similarly scaled, the VMware ESX Server does not use a host operating system — it runs directly on the hardware and can be extended by VMware Virtual SMP, an add-on module to VMware ESX Server that lets a single virtual machine span multiple physical processors creating a symmetric multiprocessing environment.

VMware P2V Assistant is a migration tool that captures an existing operating system installation and moves it into a VMware virtual machine. This lets you migrate a working system onto any system running VMware — all VMware virtual hardware looks the same to a virtual machine.

And if you're running a data center with ESX Servers you can use VMware VirtualCenter to pool your virtual machines into one management interface — a dashboard of virtual machines showing system availability and performance and provides automated event notifications with

e-mail alerting. VirtualCenter also has integrated access control with Windows authentication.

VirtualCenter includes VMotion, which lets you migrate running virtual machines from one physical server to another on the same storage-area network without service interruption.

VMotion provides "zero-downtime maintenance" by letting you move servers without disrupting user sessions while you service the supporting hardware. The potential of these products to simplify data center operations is fantastic.

VMware Workstation is a must-have for IT and development folks. The snapshot feature makes testing on a known platform simple, and it's nice to know that you are safe should the software in a virtual machine under VMware crash or go haywire and try to reformat every disk in sight.

VMware Workstation costs \$299 as an electronic distribution and \$329 as a packaged distribution, while VMware GSX Server costs \$3,025 for two processors and \$6,050 for four processors. Pricing for VMware VirtualCenter and ESX Server is per application.

Outstanding thoughts to gearhead@gibbs.com.



Cool Tools

**Quick takes
on high-tech toys**
By Keith Shaw

Finding gold at Comdex

Unlike trade shows such as the Consumer Electronics Show or the CTIA mobile phone extravaganza, Comdex generally tends to be low on the "cool stuff" radar screen. Still, if you look long enough and dig through the maze of vendors, you'll find a few gems. Here are some we found:

APC's Mobile Wireless router: Imagine you're with a group of colleagues and you go to a hotel that offers high-speed broadband Internet in the room. At \$10 or more per person, the Internet access can add up. APC's Mobile Wireless router lets road warriors take one connection and turn it into many, through the use of a device that acts like a wireless LAN (WLAN) access point with a built-in Dynamic Host Configuration Protocol server. The router takes the static IP address from the hotel's broadband access and then distributes other IP addresses dynamically to those within the range of the WLAN router. The device is an accessory to the company's outstanding TravelPower Case, a laptop bag that helps users keep all their mobile devices charged through one power source.

APC's Mobile Wireless router helps you and your colleagues cut hotel-room broadband costs.

The same effect of creating your own WLAN in a hotel can be done with a regular wireless router, but the APC device is so small that it's extremely easy to carry. It costs \$70. Go to www.apc.com for more details. The company also showed us a \$60 biometrics fingerprint scanner for home users that can store multiple passwords, and the backpack version of the Travel-

Power Case.

Anystream's Apreso 2003 for PowerPoint: PowerPoint is the standard for presentation software, but it's often very dull to watch a slide show (even painful if the presenter tries to add animation). We've seen several attempts at adding audio and video to presentations, but the effort has always seemed too difficult to do. Until now.

Anystream's Apreso 2003 for PowerPoint (formerly known as Agility Presenter) lets users give their presentations with video (via any PC Webcam) and audio (through a microphone or headset). Users watching the presentation can pause, skip slides or go back, and the audio and video immediately pick up where the user goes.

Content creators can quickly upload the finished presentation to a server or hosted online site, or users can e-mail or instantly burn the presentation to a CD. The software costs \$149 (or \$99 for an audio-only version).

This can be a great tool for trainers and others who give lots of presentations and don't need the interactivity that live presentations sometime have. For those who have to sit through presentations, watching video and listening to audio can be a step up from the normal grind of a slide show. Go to www.apreso.com for more information.

IBM's L190p flat-panel monitor: IBM expanded its line of ThinkVision monitors with the L190p, a 19-inch flat panel

LCD device. The monitor costs \$779 and is available at the IBM Web site. The monitor supports a 1,280 by 1,024 resolution, a 500-to-1 contrast ratio, 25-millisecond response time and a 170-degree viewing angle. It has a swivel, tilt and lift function to provide the best possible viewing angle for users, IBM said.

The company also has a 20-inch model.

Shaw can be reached at kshaw@nww.com.

IBM's L190p flat-panel monitor swivels, tilts and lifts for better viewing.





Guglielmo Marconi did RF well. But, in Wireless LAN Systems, no one does RF as well as Airespace.

Airespace believes it's essential for a Wireless LAN system to dynamically monitor for noise, interference, and rogues – without extra access points being required. The missing piece for Wireless LAN performance is the ability to change, to adapt dynamically to the wireless environment – and to do it without hiring a lot of RF engineers into your enterprise.

With an Airespace Wireless LAN System, the network remains in service without any noticeable performance degradation, even when dynamic power control, channel assignment and load balancing are keeping your network optimized. So there are no network outages when you are placing a phone call across an Airespace network. Ever.

And Airespace's network management system provides a total view of the entire RF-domain allowing you to generate reports, view and monitor real events, and manage your entire Wireless LAN network. We can also detect RF attacks on your network and "blacklist" questionable users.

With Airespace, the RF engineer comes in the system.

Find out more about Airespace's Wireless LAN Systems RF capabilities by logging on to our web site, www.airespace.com/RF because no one does RF like Airespace.



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EDITORIAL

Bob Brown

Answering the big question: How to?

Journalists learn early on that each story they write needs to address the five W's and the H: Who, what, where, when, why and how.

We won't ignore the five W's in this issue but we will give the H some extra attention. Our How To special section, starting on page 42, is dedicated to helping you figure out how to get from here to there.

For instance, we start the section with a road map to the new data center. Vendor pronouncements about grid, utility and on-demand computing are alluring, although far heavier on promises than actual products at this point.

In other words, now is the time to put your strategy in place rather than necessarily rushing whatever new products are available into your network. There's plenty to think about. As analyst Jasmine Noel tells us, "Utility computing does not exist in a vacuum," meaning that this is an area that requires investigating things from many angles.

Other topics covered in the special section no doubt have your attention today. Namely, how to fight spam and patch your software. While most large companies already have practices in place to address these issues, there's plenty of room for improvement and lots of new technology developments to consider.

Before installing a new spam-fighting product, for instance, one security administrator says: "Users were spending more time identifying spam on their own than doing actual work."

On the patching front, it's not just about keeping up with Microsoft's security oversights. Unix, Linux and other operating systems haven't escaped unscathed by hackers and virus writers, either. We spoke with a handful of network executives willing to share their experiences and advice.

You may or may not be syncing up storage-area network islands or moving aggressively into wireless LANs. But if you are, we've got some pointers.

We also spoke with Hank Levine, a lawyer who has been going to bat for big telecom users for years. He offers ideas for getting the upper hand in negotiations with your carriers.

Recognizing that you'll never be satisfied with the network you have, even though you might not have big bucks to revamp it, we also tick off eight ways to add oomph to your infrastructure.

We hope you find the package useful — and that we've actually answered more questions than we've raised.

— Bob Brown
Executive news editor
bbrown@nw.com



Blame game

I disagree with the analogy Dave Kearns uses in his column "Looking for blame in all the wrong places" (www.nwfusion.com, DocFinder: 8722). If someone breaks into my car, that person is the bad guy. If Ford tells me my car has locks, and I lock the car, but anyone with any car key can open my doors, then Ford is at fault.

If Ford tells me that the fix is to stand on one foot, whistle the French national anthem and touch my nose with my tongue while locking the door, then sorry, Ford is still at fault, because this solution is unreasonable and not easily accomplished.

Tom Matthews
Senior consultant
Technology Plus
Aurora, Colo.

Trained not to complain

Regarding Mark Gibbs' Backspin column "Processes and improbabilities" (DocFinder: 8723): Gibbs' comment about automated corporate telephone and e-mail systems "training us not to complain" is on the mark. Because of today's business climate, companies often have to automate customer service functions to reduce staffing costs, which is understandable. At the same time, many organizations tie pay increases and bonuses to indicators such as number of complaints. Why, there is a match made in heaven! Most people will not complain if they feel their comments are not being heard — so disengaged customers actually can skew quality indicators to make companies look better at customer service than they really are.

The other thing is that many companies are outsourcing their customer feedback systems, so there

E-mail letters to jdix@nw.com or send them to John Dix, editor in chief, Network World, 118 Turnpike Road, Southborough, MA 01772. Please include phone number and address for verification.

opinions!

is no telling how many filters a comment goes through before it gets to someone who can actually change a problematic business process or policy.

Tom Lee
Georgetown, S.C.

Protecting U.S. jobs

Regarding your "Face-off" on whether the U.S. government should do more to protect IT jobs (DocFinder: 8724): During the early 1980s, approximately 90% of my company's business resulted from offshore contracts. Following Matthew Biggs' logic, the countries I did business in should have banned us.

Also, our country can produce highly skilled technical workers. However, we cannot make people go into professions they don't care for.

Globalization has produced far more jobs than it has eliminated. However, we must be adaptable because the mix of jobs is constantly changing. Remember, there is not much demand for buggy whip makers today.

Andrew Olson
Managing director
TEAM International Group
Gainesville, Fla.

In hard times, it is easy to see why a company would want to discard high-paid positions. The value of the technology, and the technological professional that maintains it, is questionable. As Scott Turner points out, on-site maintenance personnel are the only essential positions.

I have experienced offshore technical support and find it useless. I have been transferred to support personnel in other countries and have hung up on so-called engineers who can't speak my language clearly enough to comprehend or express the already-technical IT jargon.

Seth Buffington
Irving, Texas



More online! www.nwfusion.com Find out what readers are saying about these and other topics. **DocFinder: 8721**

Mike Keefe 2003



STAYING CONNECTED

Edward Horrell

'Tis the season to be paid off

I recently got a call from a colleague who sells to the technology sector. He asked how to respond to a customer's request asking each of its vendors to make a substantial donation to the customer's IT department Christmas party. My friend's firm wouldn't pony up the bucks and he was concerned that this might adversely affect its relationship with the customer.

As an adviser to providers and buyers of high-tech products and services, I frequently hear stories like this regarding customers and prospects putting the squeeze on vendors to come up with cash, tickets, donations . . . you name it. This obviously puts the vendor in a tough situation and creates an uneven playing field for companies that are attempting to keep margins acceptable while keeping prices competitive.

Let me make it clear that I have no objection to unsolicited, thoughtful holiday gifts to customers. That is a part of doing business. But I have a problem with customers soliciting such gifts from their vendors.

Here are a few of my favorite examples:

- The local office of a national company planned a meeting for important prospects that included the vendor ordering lunch for the meeting. The meeting was canceled that morning, but the company asked that the lunch be sent over anyway. Bon appetit!

- A sales rep lunching at a restaurant spotted an employee from one of his company's major customers. The customer was having lunch with someone whom the sales rep didn't know, but he stopped by the table and said a polite "hello" nonetheless. Later that day, the sales rep received an e-mail from the customer criticizing him for not

picking up the lunch tab for the customer and his friend. Dessert, anyone?

- A vendor reserved a box at a baseball game for a customer event and asked that customers RSVP, as tickets would be available on a first-come, first-serve basis. A major customer that had ignored the respond-by date called to request seats in the box. Told that the box was full but regular tickets were available, the customer declined to attend the event. Foul ball!

- A customer called to take a vendor up on an invitation for golf and drinks at the vendor's private club. The vendor was delighted and asked when he could set up the round. The customer replied that he would take care of that, and, by the way, the vendor wasn't invited to play, just pay for the round and drinks. Fore!

C'mon customers, lighten up! It's not right to pound vendors to slash prices and then expect them to come across every time you think you need to be entertained.

A better way would be to simply let your current and prospective vendors know what is expected of them. If you expect donations to the Christmas party, let them know upfront. Tickets to the ball game, ditto. Give them an opportunity to build it into their rates. Even better would be a policy that says, "Thanks, but we don't allow corporate gifts from vendors."

Happy holidays.

Horrell is an independent telecommunications consultant, speaker and author in Memphis, Tenn. He can be reached at www.edhorrell.com.

It's not right to pound vendors to slash prices and then expect them to come across every time you think you need to be entertained.



CACHE ADVANCE

Linda Musthaler

Deception is harder in a digital world

One quick scan of the business press will tell you that on-the-job ethics seem to be at an all-time low. In case after case, big executives are caught in their webs of corporate deception. But the irony is that it is becoming incredibly difficult to lie, cheat and steal in a digital world.

Computers seem to capture our every move on the job these days, recording subtle transactions or activities that can come back later to haunt you. In most cases, an employer has the right to know how you make use of company-owned resources, including your time while at work. This monitoring isn't necessarily a bad thing, as long as it doesn't get abusive or interfere with an individual's right to privacy.

Take e-mail, for example. Most employees understand that their business e-mail accounts are a corporate resource, provided by the employer as a tool to get one's work done. That doesn't stop people from using company e-mail to exchange all sorts of information that has nothing to do with a company's business. Many employers will tolerate a small amount of innocent misuse, letting people conduct social transactions such as sending a quick personal note to a friend, photos of the new baby to family members, and so on.

Increasingly, however, companies are monitoring e-mail using content filters, and I'm not talking about weeding out spam. Suspicious messages passing through a content filter can be trapped and acted on appropriately, very often without the employee's knowledge. Sometimes the consequences aren't pleasant.

I know of one instance where an employee lost her job through her own lack of integrity (and common sense). She arranged an interview with a competitor using her then-current employer's e-mail system. A filter trapped the note and forwarded it to human resources and to her manager, who noted that she called in sick on the day of the planned interview. When she returned to work the next day, the manager asked her whereabouts on the previous day. When the employee said she was

at home, sick, the manager produced the e-mail proving the arrangements for the interview. Admitting her deception, the employee was dismissed for misuse of company e-mail and lying about her use of company-paid time.

Digitally monitoring employees at work is becoming more pervasive as employers grow concerned about increasing productivity. I just read about a law firm that makes its office workers "punch in" by placing a thumb on a biometric reader each time an employee enters or leaves the office. One secretary admitted that it forced her to be more mindful of the length of her lunch breaks, knowing she could be docked for extra time spent out of the office. While employees might resent the oversight, companies have the right to know people are present during the time they are being paid to be there.

As the technical professionals responsible for deploying, managing and perhaps even monitoring the systems that keep track of employees, I'm not sure we do enough to make people aware they are being watched. Yes, there's that splash screen that pops up when someone logs on to the network that says "this system is for company use only," implying acceptance of the policy when continuing on. People might read it the first time they get onto the network, but mostly it's an annoying screen that slows down the logon process.

I'd like to see more companies have regular employee training about the implications of digital monitoring. You don't have to reveal all the techniques you use to monitor people, but you should make them aware that virtually nothing they do on a computer is private. While browsing eBay during lunch isn't illegal, it still isn't right, if the employer has said this is inappropriate use of the company network. The idea is not to frighten employees, or to make them paranoid about Big Brother, but to enlighten them about company policy and the expectations for responsible use of the computer network.

Musthaler is vice president of Currid & Company, a Houston technology assessment firm. She can be reached at linda@currid.com.

I'd like to see more companies have regular employee training about the implications of digital monitoring.

In

football, an audible is a quarterback's opportunity to change his strategy after seeing the defense line up on the field. A slew of vendors — advocates of so-called utility computing — are promising to give IT executives the tools to likewise deploy IT resources on the fly as business conditions change.

In theory, utility computing gives managers greater utilization of data-center resources at lower operating costs. At their disposal will be flexible computing, storage and network capacity that can react automatically to changes in business priorities. The data center of the future also will have self-configuring, self-monitoring and self-healing features so managers can reduce today's manual configuration and troubleshooting chores, advocates say.

The allure of utility computing is easy to see, but there's no clear road map. Getting there requires an approach that encompasses network gear, servers, software, services and IT governance. It also requires balancing the maintenance of existing IT resources with strategic new investments.

Having a clear picture of what already has been deployed is crucial before companies start to roll out new, intelligent devices. This might sound obvious, but experts say it's not always done.

Gartner analyst John Phelps says many companies don't know where all their servers are located, who controls and owns them, and the main functions and applications running on them.

Companies also don't have a clear picture of how their IT assets relate to each other. For example, one e-business transaction might depend on data culled from several applications running on different platforms in multiple locations. Figuring out these sorts of dependencies is a prerequisite of higher level computing, analysts say.

"Utility computing does not exist in a vacuum," says Jasmine Noel, principal with JNoel Associates. "The only way to do it is to first understand the relationships between hardware and software resources delivering a particular business service. Inventory discovery and relationship mapping are the keys to starting."

While companies focus on the fundamentals, vendors are working to create intelligent devices, management tools and services for utility consumption. The field is crowded, weighted by HP, IBM and Sun. IBM uses "on-demand" to describe its initiative. HP has its Utility Data Center lineup and Sun has its N1 data-center architecture.

Several software vendors have a stake in utility computing, including management software makers such as BMC Software and Computer Associates and storage management software maker Veritas Software.

There's plenty of work to do. Analysts say

How to get utility computing

■ BY ANN BEDNARZ AND DENISE DUBIE

it will be a long time before routers can reconfigure themselves, servers can provision themselves and applications can dedicate more resources to themselves on the fly without human intervention. Building a true utility computing infrastructure is at least a seven- to 10-year effort, analysts say.

That doesn't mean companies should shelve their plans. There are plenty of opportunities to begin consolidating, standardizing and automating data-center resources today — and begin reaping the rewards of improved system management and reduced complexity.

Management counts

Management is the cornerstone of utility computing. Management software in the new data center proposes to do more than monitor devices; it will store and enforce policies, discover devices, track changes, meter usage and ultimately take action when performance degrades.

The challenge will be capturing end-to-end systems data and consolidating it into something manageable, says George Hamilton, a senior analyst with The Yankee Group. "IT managers need to focus on getting all the data they capture from instrumentation and testing, and consolidate it in one place so they can more effectively manage," he says.

But it won't be easy. Today, most companies use multiple management systems to collect performance and availability data, identify potential failures, and provision devices, applications and end users. To be useful in an adaptive environment, management systems must evolve beyond islands of expertise.

"It's a challenge to get multiple systems optimized and running and tied together. Anybody looking at utility computing should try to find a vendor that has a comprehensive solution that can help people tie the pieces together," says Bob Ackerly, president of Smith and Associates. The Houston semiconductor company uses Vio's Adaptive Application Infrastructure Management (AAIM) appliance to monitor about 40 servers in its data center.

Some vendors are working to make prod-

ucts more cooperative. For example, BMC recently partnered with security vendor Symantec and storage leader EMC to share management data across systems. Similarly, Cisco and IBM recently signed a deal in which the two will develop a common way to detect, log and resolve system problems.

Vendors also are developing management tools that not only watch devices but also monitor distinct business functions. Concord Communications, Mercury Interactive and Micromuse have begun to develop their software tools to track the success and failure of business processes.

Following the path of a business process means crossing Web and application servers, databases, storage devices and the routers that direct traffic. To adequately track the path, the software first must find relationships between data-center components; map those relationships into a logical topology; and configure the devices to report on how they perform, change and respond to application requests, Noel says. "It can be a mess unless some smart operations planning is done upfront."

Gear: Simplify and consolidate

If moving to a utility computing model required IT executives to abandon their existing infrastructure and start from scratch, there likely would be very few takers. Fortunately, industry watchers say, companies can find inexpensive ways to incrementally add components of an adaptive data center to existing setups.

For example, today's routers, switches, servers and storage devices can do more than their standard tasks in the data center — if instrumented correctly. Vendors such as Cisco, HP and IBM today deliver 'intelligent' devices that can provide information critical to their state. These features could let them perform self-diagnosis, self-healing and self-managing tasks, shortening the time it takes administrators to identify and resolve potential problems.

"Enterprise companies can, through attrition, introduce and embed these intelligent devices that have self-managing features into the network fabric," says Ahmar Abbas, managing director at research firm Grid

How To

Our step-by-step guide to addressing the most pressing network issues of the day

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et to computing

It's called grid, utility or on-demand, but it's all about the same thing: Creating computing infrastructures that can dynamically change tasks as processing needs ebb and flow. It's a grand vision, but getting there won't be easy. Here's how to start.

Technology Partners. As new or existing projects necessitate hardware purchases, IT managers should invest in equipment with automated data collection and export features, which could eliminate the need for future instrumentation on the devices, Abbas says.

Equipment consolidation is another strategic move to consider. Managers can decrease the number of physical servers they maintain by combining applications into fewer, larger multiprocessor servers, or merge their storage into pools that can be managed from one interface. "A company can't get to a dynamic environment if it doesn't get rid of some of the hodgepodge," says Mary Johnston Turner, vice president at Summit Strategies.

Mark McNamara, IT director at Weight-Watchers.com, says thinning out the number of servers is an attractive option, but vendors need to enable virtualization beyond storage and servers for utility computing to take off. The New York company recently started working with BladeLogic to automate server provisioning.

"Hardware vendors are laying the groundwork, but the initiative will need more supporters," McNamara says. "Virtualization will need hardware, software, network and storage vendor support."

Prune those apps

Companies also need to consolidate applications. As companies move toward simpler, standardized hardware, they also should consider who their key software providers are so that any platform decisions made — such as cutting the number of different operating-system variants and release levels to reduce complexity and cost — don't preclude using those vendors' applications, Turner says.

Companies should consider defining and implementing standards in areas such as database management systems, application interfaces, development languages and middleware, Gartner's Phelps says. Many companies are bogged down with multiple directories, data repositories and rogue Web servers — often the result of departmental initiatives undertaken in the absence of corporate-wide system standards. Paring down the number of applica-

tions will improve system management and reduce complexity, Turner says.

Likewise, technologies such as identity management can simplify operations and automate redundant IT tasks. Identity management processes are aimed at creating and maintaining common security profiles across multiple applications — reducing the burden on IT managers to handle mundane tasks such as resetting passwords.

Analysts also identify opportunities to gain efficiencies at the business application level — although consolidation is toughest at this level, Turner says. It's not uncommon for companies to support multiple versions of the same applications, each with distinct data definitions. Reconciling the separate instances often requires re-deploying software.

If companies don't want to tamper with existing installations, there are other ways to simplify application infrastructure. In the same way storage resources can be virtually linked rather than physically consolidated, companies can link information to reconcile different data formats without tangling with underlying data structures. Information-integration tools such as those from IBM and start-up Avaki add a layer of abstraction that makes it easier for data elements to become part of shared resources across the organization, she says.

Turner recommends starting small: Companies should consider first migrating the applications used by a portion of the employee population — such as sales and marketing — from individual servers to a shared infrastructure. Within that shared infrastructure, users can determine application priorities, common security privileges, and automated policy responses.

Pay attention to processes

Building a smarter data center requires incorporating business goals and processes into technology systems. The issue is part cultural and part technical. Business leaders need to communicate business objectives to the IT department, and IT executives need to map those objectives to technology resources. Collaboration is required

— but not always easy.

"The IT organization almost has to become social workers," Turner says. "They have to sit down with all these different business constituencies who have no interest in making each other happy, and they have to convince them that there is a business reason and a business benefit to them, to their little business silo, of running on a shared architecture. And they have to demonstrate that they can protect the interests of each particular business area."

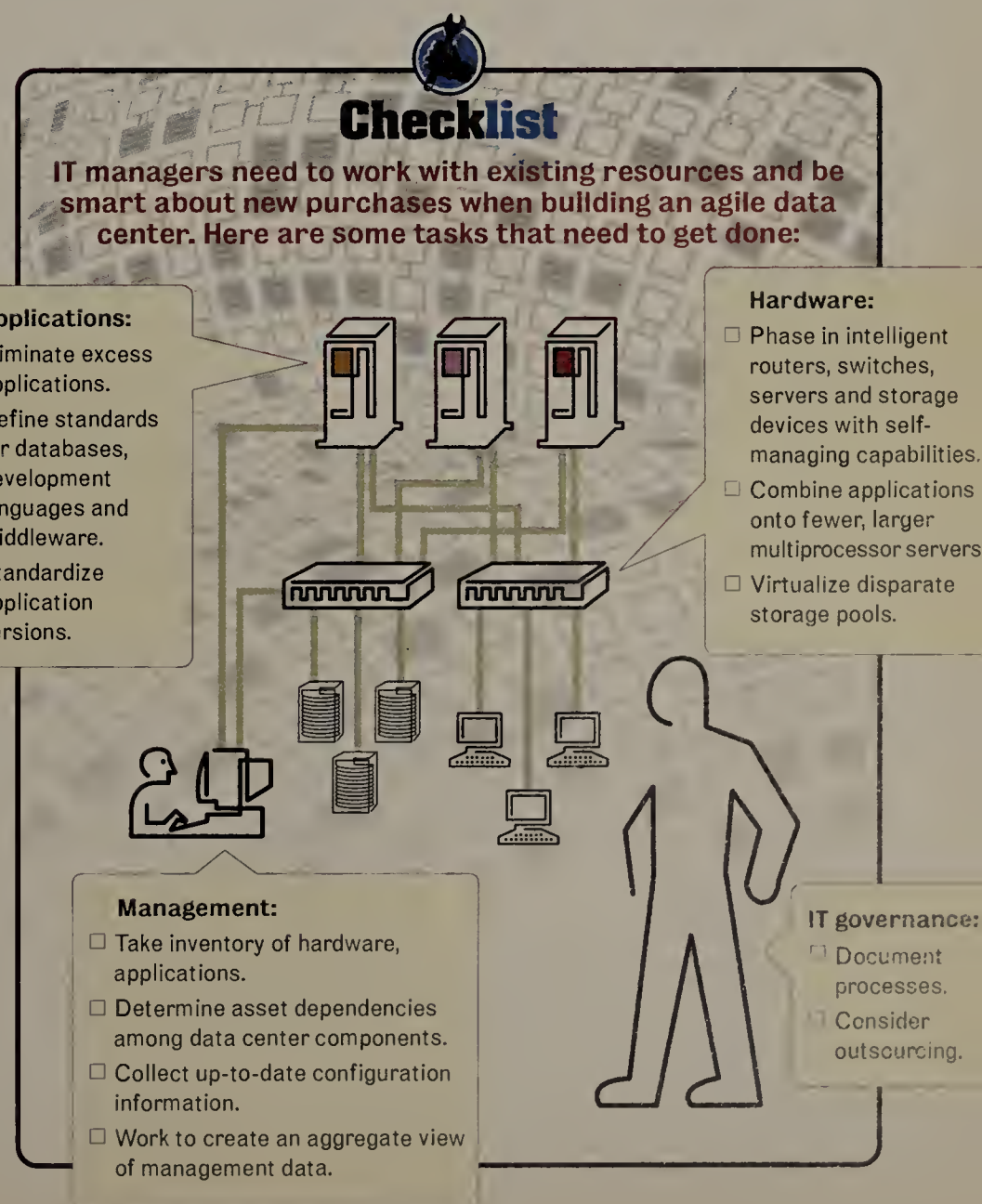
Lee Adams, vice president of infrastructure services at Hospital Corporation of America in Nashville, agrees. "That's the hard work of delivering complete service-level management to the business process. You have to go out and pin folks down in different departments and then take their processes and put them into the software."

Lee works with BMC to automate service management across billing, medication and patient applications. He says inputting "how people get their job done, from the most basic chore to complex processes" is

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"IT managers need to focus on getting all the data they capture from instrumentation and testing, and consolidate it in one place so they can more effectively manage."

George Hamilton,
senior analyst,
The Yankee Group



NETWORK WORLD
SPECIAL SECTION

How To

Our step-by-step guide
to addressing the most
pressing network issues
of the day

Q&A: Get more bang for your telecom bucks



"It's leverage that gets you a good deal. If you think you're going to get a good deal because you're a long-time, loyal customer, you're wrong."



More online

Find out what Levine thinks about individual carriers.

www.nwfusion.com,
DocFinder: 8721

Telecom spending represents a big chunk of most IT budgets, but industry competition and negotiating finesse can reduce costs. Hank Levine, a Washington, D.C., attorney with Levine, Blaszak, Block & Boothby, has helped large companies squeeze carriers for years. Levine spoke recently with Network World Senior Editor Denise Pappalardo. Here is an edited version of the interview:

How has the landscape for negotiating telecom contracts changed in the past few years?

The landscape has changed in several key respects. First, the rapid price decreases we saw in the late 1990s (10%, 15% or 20% per year) have trailed off. We are still seeing price decreases, but the decreases are more like 5%.

Second, there has been an upheaval in the industry from MCI/WorldCom's bankruptcy to the entry of the [regional Bell operating companies] in the long-distance market.

The third change is next-generation technology's impact on the market. Much in the same way that frame relay shook up the data world in the mid 1990s, IP VPNs and [voice over IP] are starting to do the same. All this is happening at the same time we are seeing growing use of mobile service, various forms of remote access and the death of the calling-card market.

How do less-aggressive price decreases affect users at the negotiating table?

One thing people have to do is temper expectations. There are ways to keep getting 10% to 15% price decreases, but they don't include walking into your carrier and simply asking. You can still do very well, but it takes a lot more effort.

How can users lower their annual contract rates by 10% to 15% if the average is 5%?

They have to be willing to move some traffic to a second-tier carrier, and they have to be willing to change. There is always a better bid from a user's non-incumbent carrier. If you don't show that you are willing to go through the pain of changing service providers, then the ability to get those dollars from your incumbent is compromised.

Is the fact that MCI is still in bankruptcy, although close to emerging, something users should consider?

Yes. The last five years have proven that diversity of carriers is important. We tell MCI customers: Stick with MCI, but you can't give them 90% of your business. Cut that percentage in half.

We say that, with a little less urgency but for similar reasons, to Sprint and AT&T customers and certainly to Qwest customers.

How seriously should users consider the fact that most RBOCs will soon be able to offer national long-distance voice and data services?

There is good news and bad news about the RBOCs. The bad news is that the RBOCs are not ready to support large, nationwide networks. The good news is they are a lot more ready than they were 12 months ago and in another 12 to 18 months they will be ready for prime time.

Why is diversity so critical today?

Diversity assures users that their network will not go dark if their carrier files for bankruptcy. Those with a weak lead carrier, which MCI is the best example, need a lot of diversity and are foolish not to have two T-1s into their major facilities.

Does diversity mean a user's telecom spending will go up?

Actually, it means their costs will go down. People believe what you pay depends on the volume you purchase. That is a lie. There is no correlation between volume of service delivered and the price you get.

The single best prices I know of go to a wonderful little catalog shop in Florida. The

guy spends a million dollars a year. He has people begging for his business because he does one-year contracts and at the end of the year it's up for auction.

His willingness to change carriers gets him the best deal, not the fact that he's spending a certain amount with one carrier per year?

Yes. The carriers will tell you: If you have \$6 million in traffic, I'll give you a good price if you give me \$4 million; a little better if you give me \$5 million; and the best price if you give me \$5.5 million of that traffic. The guy who spends \$12 million gets the same story and the same prices.

What should Fortune 1000 users keep in mind as they sit down to negotiate their contracts?


It's leverage that gets you a good deal. If you think you're going to get a good deal because you're a long-time, loyal customer, you're wrong. Making the carriers believe you can and will move traffic is the first thing.

Second, know the timeline. Three months before your contract is about to expire is not enough time to do an RFP and migrate traffic, and your carrier knows it. Start thinking about negotiating a year in advance of your contract expiring, get real serious nine months in advance and finish negotiating a new deal six months in advance.

Third, know your traffic. If you know your traffic, you can better compare bids. Don't let your incumbent tell you what type of traffic you have at the negotiating table.

What is the industry standard for contract lengths?

Keep it as short as possible. The industry standard had been three years, but now more deals are being done with two-year terms. With a three-year deal you need a rate review clause with some teeth because rates will have gone down during the life of your contract. ■



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NETWORK WORLD
SPECIAL SECTION

How To



Our step-by-step guide to addressing the most pressing network issues of the day



Checklist

For spam fighters

- Look for anti-spam products that employ more than one type of filter — white or black lists, fingerprinting — to capture spam.
- Decide how much control your company wants over e-mail that's been deemed spam, and whether end users or the network administrator should manage it.
- Educate your end users to identify and report any spam that does get through, and alert them to e-mail fraud. One clue to detect spam is if the sender's e-mail address differs from the company's name in the message.
- Limit Web surfing on company PCs; an easy way for spammers to find live e-mail addresses is by lifting them from sites where visitors have input their address.

Fighting spam

T

BY CARA GARRETSON AND ELLEN MESSMER

he idea of saving millions of dollars annually would be a hit with any company. Combine it with increased end-user productivity and reduced network administrator headaches and you've got a home run. That's been Jason Sosinski's experience with MXtreme, a spam-fighting appliance from Borderware that his company installed last year.

Sosinski, IS security administrator at ARS Service Express, estimates that the heating and cooling services company is saving roughly \$2 million per year with MXtreme.

"Users were spending more time identifying spam on their own than doing actual work" before MXtreme was installed, Sosinski says. Now, of the approximately 11,000 e-mails the Memphis, Tenn., company's 2,500 employees receive each day, roughly 50 are spam. "That's a number I can live with," he says.

Most companies have experienced the toll that unwanted e-mail takes on their employees' ability to do their jobs, their network and storage resources, and their network managers' patience. In a recent survey by The Radicati Group, 43% of companies said they didn't have a formal anti-spam policy in place. Those companies should invest immediately in spam protection, the research firm says, or suffer the consequences as the percentage of unwanted e-mail in corporate in-boxes — now totaling at least 50% of all e-mail — continues to rise.

The good news is the market is flooded with ways to reduce spam. From software that sits at the messaging server to gateway applications to dedicated appliances and outsourced services, vendors pop up almost daily, offering products dedicated to zapping spam. Companies that specialize in other areas, such as virus protection, content filtering and multifunction appliances also are entering the market, in an attempt to become one-stop providers of messaging security needs. While choice is good, the anti-spam market has become a dizzying array of products and technologies.

Before attempting to sift through the various anti-spam approaches, companies should make a few key decisions to help guide their search. Are you comfortable outsourcing your spam headache to a service provider, which means

"Users were spending more time identifying spam on their own than doing actual work."

Jason Sosinski, IS security administrator, ARS Service Express

letting your e-mail traffic flow through their data centers before hitting your corporate network? If you prefer an in-house solution, should it sit at your mail gateway to ward off spam before it enters your network, saving valuable resources, or at the mail server where it can perform additional tasks as well? Or does a dedicated appliance that can't be tampered with sound more secure? And what about offerings from established messaging security vendors?

While these approaches have their pros and cons, analysts agree they all beat doing nothing. Because most of these enterprise products employ more than one means of filtering spam — be it through heuristics, fingerprinting, black and white lists — the distinctions come down to where a company wants to install the product and what kind of administrative features it's looking for.

"In general, all of these approaches are effective," says Matt Cain, an analyst with Meta Group. "I don't think [there are] wide discrepancies in how much

spam they filter, we find the major [differences] around now that they've caught the spam, what to do with it?"

Anti-spam services

The leaders in this market include Postini, FrontBridge and MessageLabs. Their services divert a company's incoming mail to their own data centers, where a number of techniques are employed to quarantine unwanted e-mail messages, and the remainder of the traffic is passed on to the customer. Anti-spam service vendors tune their filters to be sensitive to false positives because businesses are often more concerned about missing wanted communication than having a few extra spam messages in their users' in-boxes.

Anti-spam services can be the right answer for companies that want to dedicate minimal IT resources to handling spam. "We wanted to go with someone who was more of an expert in the area, rather than have that responsibility

See Spam, page 48

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IBM

Spam

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Gillman, director of technology with law firm Allen Matkins in Los Angeles. "Certain things should be outsourced."

Gillman chose FrontBridge.

Other advantages of anti-spam services include how quickly customers can get up and running — it usually takes less than a week, while installing and configuring software in house can take a couple of months, says Meta Group's Cain. Because there's sure to be a shakeout in the anti-spam market that will leave a few big companies standing, using a service for a year or two is a good way to avoid having to choose an anti-spam software vendor until clear winners emerge, Cain adds.

Responding to the security concerns that some companies have about letting their e-mail flow through a third party before it reaches the corporate network, Postini's Scott Petry, founder and vice president of products and engineering, says, "Incoming e-mail has already been out on the Internet. We offer a service that allows people to resolve their spam

Group. A typical FrontBridge customer spends between \$1.50 and \$3.50 per user, per month.

Gateway and server software

This is where the anti-spam market gets most crowded, with Brightmail being the dominant player and Active-State, Cloudmark, Proofpoint, Mail-Frontier and others offering products as well. Anti-spam gateway software sits at a corporation's mail gateway to filter spam out of the incoming messages. These products generally give companies the most options for how they want to handle spam once it's caught, including quarantine areas managed by end users where spam messages are held. Many products also offer black and white lists, which dictate e-mail senders that should always be blocked and never be blocked, respectively.

Wyndham Hotels, of Irving, Texas, installed and ripped out anti-spam gateway software from an unnamed company before deciding to go with Mail-Frontier's software. "That gave us an opportunity to see what our needs were. We learned we needed a lot of end-user functionality," says Lyndon Brown, manager of network service and electronic messaging at Wyndham. Brown is responsible for supporting the company's 7,000 e-mail users. With MailFrontier's Anti-spam Gateway software, Wyndham's users receive a daily list of what messages were blocked as spam, although Brown says that as users grow more confident in the software they check the list less often.

Also on the market are anti-spam packages that integrate with a company's e-mail server, such as those from Block All Spam and SunBelt. A number of vendors don't specialize in spam protection but include it in their offerings — the advantage is tight integration with other messaging services, such as e-mail policy enforcement and virus protection.

Summit Electric Supply, which has about 550 employees, uses Clearswift's MailSweeper server software to filter e-mail for spam and any objectionable content that might violate corporate e-mail policy.

The Albuquerque, N.M., company traps about 2,500 spam messages per day using the server-based filter, says Kurt Williams, CIO of the industrial supply firm.

Using anti-spam software on a mail server also means companies can scan outgoing mail and incoming messages. Atlanta law firm Arnall Golden Gregory uses NetIQ's MailMarshal to monitor outgoing e-mail for possible sensitive messages related to medical issues and privacy, says network administrator Paul Grulke.

"We built a hit list of key words, such as 'chiropractor' and 'patient,'" Grulke says. Outbound mail with these keywords might be stopped, which helps the law firm comply with the federal law known as the Health Insurance Portability and Accountability Act.

Gateway appliances

These appliances from Borderware, Corvigo, Sendio and others also sit at a company's gateway to detect incoming spam, but consist of a dedicated server and hardened operating system that vendors say offer heightened security. In general, these appliances offer the same amount of spam protection and administrative and end-user controls as anti-spam software. However, anti-spam appliances tend to be easier to set up because there's minimal configuring. They also might offer better performance because the operating system is tweaked for the task, Meta's Cain says.

Borderware is taking a more-is-better approach to fighting spam. The anti-spam appliance vendor recently announced plans to integrate Brightmail's anti-virus gateway software with the next release of its MXtreme appliance, offering additional anti-spam filters and increasing its product's scalability. MXtreme can scan traffic only for companies with up to roughly 4,000 users.

Security-plus

With the anti-spam market booming, it's no surprise that vendors offering other types of e-mail products want to get in on the game. Security vendors including Network Associates, Symantec and Trend Micro have introduced anti-spam products, both software- and hardware-based, and some multi-function devices that act as firewalls and anti-virus filters as well as offer spam protection.

Some analysts think multi-use products could quickly upstage stand-alone anti-spam software or appliances because IT departments often prefer having fewer products to install and maintain.

But others warn that it's too early in the development of anti-spam technology to trust this crucial task to a company that doesn't live, eat and breathe spam. While a number of big anti-virus companies offer anti-spam products too, "generally their spam-blocking stuff is still immature, compared with what else is on the market," Cain says.

"We expect in a year or two that will change . . . For now I would say you need to go with a best-of-breed vendor," he adds. ■

Spammers stay one step ahead

Despite advances in anti-spam technology, spammers consistently manage to foil the products designed to thwart them. As long as sending unwanted e-mail remains a profitable proposition for spammers, they will continue to find ways around filters with techniques that are becoming more advanced.

In the last six months HTML-based spam has started replacing text-based spam, says Sue Larsen, vice president for global content team at SurfControl. "It can be just an image pulled down from a server," she says about this new form of spam. This "hidden agenda" technique lets the spammer split spam words by mixing ASCII text and HTML to make them unreadable by dictionary-based scanning tools.

Another technique called treacherous tracks, makes it possible to capture a recipient's e-mail address when he clicks on a picture embedded in the message. More severe still are "dodgy domains," which let spammers commit fraud by redirecting users to a fake Web site masquerading as a legitimate one.


Dodgy domains have been used in several cases of online fraud committed against banks, such as Citibank, and e-commerce sites, such as eBay. "They just hijack you," Larsen says.

A recipient of the e-mail who doesn't recognize that the originating e-mail address doesn't match the company name in the e-mail might click on a link embedded in the message that brings the recipient to the dodgy domain. There the recipient is asked to enter personal and financial information, such as Social Security number or bank account number, which allows the spammers to steal the recipient's identity.

— Ellen Messmer

problems before it hits their network."

On the downside, anti-spam services can cost more in the long run than software or an appliance, because the services usually involve a monthly fee, not a one-time charge, says Masha Khmartseva, senior analyst with The Radicati



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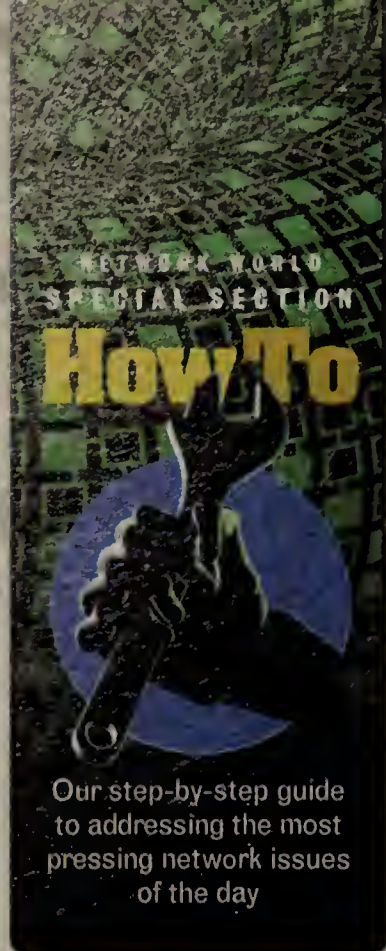
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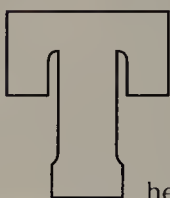
April 22, 2003
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Patching: Process matters

■ BY JOHN FONTANA



he list of all-too-familiar names — Nachi, Klez, Lovsan, SoBig, BugBear, Swen, Blaster and Yaha — represents only a sampling of the most prevalent worms and viruses that slithered into corporate networks this fall. But they all have one thing in common: Patches were readily available before most damage had been done.

So why do these intruders continue to wreak such havoc?

Because patch management is tough.

It's tough because there are too many patches and not enough time, and because exploits to announced vulnerabilities are materializing faster. (Blaster appeared only 26 days after Microsoft reported the vulnerability.)

It's tough because clients are becoming the attack targets as much as servers, fueling faster propagation and the threat of re-infection from mobile workers reconnecting to the network.

And it's not just Microsoft vulnerabilities. Although Windows seems to get the bulk of the exploits and end-user animosity, the list of targets includes routers, switches, firewalls; Unix and Linux, too.

Patching chores likely will never go away, experts say, but there are ways to address the task proactively to minimize exposure.

"Patching is the physical process," says James Williams, information delivery manager for RBC Centura Bank in Rocky Mount, N.C. "But you have to manage that process, and to do that you need some structure."

Centura has an 11-person staff as part of a computer security incident response team that maintains what Williams calls a "very systematic and very organized" patch management process. That process utilizes inventory, change-control practices and automated deployment supported by tools from Ecora, IBM/Tivoli and others.

"I might not have enough staff, but I have processes and organization that help me cover that issue," he says.

How to patch

"We see people looking for a tool that will solve all their problems, but what you need is a process; it's not just about the tool," says Felicia Nicastro, senior network systems consultant for International Network Services, a consulting firm that kicked off a patch management service in September. Nicastro says the biggest mistake companies make is leaving out the processes, such as diligent monitoring for new patches coupled with detailed evaluation, testing, deployment and validation that a team or individual manages.

"This typically isn't a task for one person. It has to involve the security group, the operations group and the developers," she says. "So what also makes patching tough is a lack of resources."

Nicastro says companies need to have several pieces in place before a patch management process can be installed: network inventory, change management, configuration management, asset management, formalized record keeping, an understanding

of costs, prioritization guidelines, and maintenance and communications plans.

"Getting a process in place can be difficult if you don't have all these pieces together," she says.

Inventory, or documenting what machines run what software, is the first step.

"This might be your biggest cost," Nicastro says. "Inventory can take some time."

Inventory ties into asset, change and configuration management. "If you track configuration then you know what's changed, and that can help with future patching," she says.

The process starts, Nicastro says, with monitoring for new vulnerabilities and available patches for everything in inventory. Once a vulnerability is identified and determined to be a threat, teams of IT, data and operations managers must work together to usher a patch through the established rollout process. A course of action and a timetable for execution, including lab testing, should be established.

"Many times companies don't have the money to support a lab or duplicate environment, but at a minimum you should try to duplicate business-critical systems, say a Web server with a database back end," Nicastro says.

After testing, distribution of the patch, implementation, exception handling, tracking and reporting need to be done.

Software and services for such tasks are available from vendors such as Altiris, Big-Fix, Computer Associates, ConfigureSoft, Ecora, HP, IBM, Loudcloud, Microsoft, Novell, PatchLink, Shavlik Technologies and St. Bernard Software.

Nicastro says in times when patching becomes a fire-fighting exercise, companies should quarantine the worm or virus on

See Patching, page 52



Dos and Don'ts

Do

- Establish a team or appoint an individual to monitor for new vulnerabilities.
- Create a process to evaluate and deploy patches.
- Acquire a set of software tools to support the process.
- Develop a procedure for validating installation of patches.
- Quarantine bugs/worms on network segments in an emergency.

Don't

- Try to patch without creating an inventory of all your systems and software.
- Think the problem is under control just because you have a software tool.
- Delay deployment of patches listed as critical because exploits now are showing up soon after vulnerabilities are announced.
- Assume that attacks are more likely to come from outside rather than inside your organization given recent attacks that were launched using infected internal clients.

"This typically isn't a task for one person. It has to involve the security group, the operations group and the developers, so what also makes patching tough is a lack of resources."

Felicia Nicastro, senior network systems consultant, International Network Services

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network segments and patch using their documented processes.

"The number of vulnerabilities, their exploits and the serious damage that they can do is why having a process is so important," she says.

Patching in action

Those words ring true for Williams at Centura Bank, whose organized process includes assigning a value of critical, high, medium or low to each vulnerability.

"If it is critical, each manager on our [computer security incident response] team has to respond [with their course of action] in 24 hours," Williams says. The vulnerabilities are compared against an inventory of everything on the network, including 250 servers and 1,800 desktops. The inventory is updated weekly.

Once the team managers decide a patch is needed, a five-step program Centura calls release management is followed. The first step is to develop the change process, which is then logged and audited as part of Step 2. A series of tests are done at Step 3, and if the results are inadequate the

don, Va., and London. The company has 4,000 Windows servers, 4,000 servers running either Linux or Unix, 50 routers and 500 firewalls it maintains for customers.

"Software will never be perfect and will always require diligence and good security practices to maintain it," Engates says.

He says patching routers and firewalls is more like updating versions of software, but still there is a formal process that begins with network engineers who monitor discussion boards and security sites. "They eat and breathe this," Engates says.

After a new patch is identified, a lead engineer is notified. If the patch is for a critical flaw, notification is sent straight to the vice president of engineering who decides if the patch is needed and structures the process toward deployment, if necessary.

If the patch is for a router, the lead engineer carries out the patching plan, from calling in the right people to building automated deployment scripts.

The patch is tested in Rackspace's lab, a scaled replica of its network.

"The testing length depends on how big a patch it is," Engates says. The patch is rolled out within a pre-scheduled maintenance window, and the engineering team does a postmortem, gathering documented changes and evaluating the process.

"When we feel like we are in danger of being exploited, then we will open an emergency [maintenance] window and do the patching," he says.

On the server side, Engates says the process is a bit different because customers are responsible for some patching chores. He says Linux also is a unique platform because it doesn't have as many user-friendly tools as Windows, although Microsoft's tools have their own consistency issues.

"We have no formal [Linux] configuration management tool. There is more human interaction with these servers than on the Windows side," says Engates, who notes the Windows platform sees a larger percentage of exploit code.

When Rackspace identifies a vulnerability on its Windows servers, a process similar to that for routers and firewalls is followed. Testing is done for a minimum of 48 hours to make sure there are no problems. If problems arise, the patch is put on hold and Microsoft premier support is called in.

"We pay for this service, and it is very important we maintain this relationship," Engates says.

The operating system team is ultimately responsible for giving the go ahead to install the patch, and Microsoft's SMS is used to roll it out to the live network.

"We maintain an internal knowledge base, which documents the changes, processes and procedures so we don't make mistakes," he says. "Mistakes are bad."

Open season on clients

David Giambruno, director of strategic infrastructure and security for Pitney Bowes, says the big patching challenge now is scale.

"In the past [four months] there have

been new types of attacks that go after the clients," he says. "It's not just the servers anymore, and it's increased the scale of the problem." He says Pitney Bowes has thousands of servers and clients to go along with hundreds of routers and switches. Giambruno says patching clients used to be a natural result of the client upgrade cycle. That no longer works.

"The problem is the speed and the propagation of the worms. We can't just shut off Port 135 or other networking ports because you shut off your client networking," he says. Early in the Blaster attack in August, Microsoft advised shutting off Port 135 to stop the spread of the worm. "If I turn off the port, it's a denial-of-service attack either way," he says.

Giambruno says the company's processes for automatically patching servers has been extended to clients.

In the wake of Blaster, the company deployed software from BigFix that provides a holistic view of the entire network, which stretches across 18 countries.

"If someone turns off anti-virus software on their desktop, BigFix turns it back on. If it's not installed, BigFix installs it," says Giambruno, who says automating processes is the only way to make patch management economical.

Pitney Bowes categorizes all its network assets and their relevance to the company. Client desktops are given a risk profile from 1 to 5, with 5 being the clients that must be the most secure. "Everything we report on has to be actionable," he says. For instance, desktops rated a 5 must be patched in less than 24 hours.

"Inventory is immensely critical. We built a network-detection tool, and we know everything plugged into our network. Network creep is the enemy," he says.

Pitney Bowes has a hierarchy to its patch process that includes global and regional patch delivery teams. The global team consists of representatives from the regional teams. When a vulnerability is identified, Pitney Bowes assesses the potential impact by using its data catalog to identify vulnerable systems, where they are and what they support. After the assessment, the global team or a regional team will take responsibility for the patch, depending on the systems it affects. Then the process of testing, deployment and documenting begins.

"We are getting really good at this," Giambruno says. He says the worst security incidents have taken from 1,000 to 1,500 man-hours to correct. That time is now down to 75, with a goal of ultimately reducing it to 20.

He says success comes from many fronts but includes senior management acceptance, maturation of the delivery teams and the fact that people have bought into the philosophy.

"Viruses don't care who you are. They will infect you and take down your entire network," Giambruno says. "You'll make some errors, but you have to develop some processes. Otherwise, you can't afford the manpower for [patching], no one can." ■

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Popular tools

A recent online survey of about 4,500 users conducted by the NTBugtraq security Web site shows the most popular free and fee-based patch management tools.

(Note: Not all respondents use fee-based tools.)

Free tools	Provider	Respondents using tool
Manual	NA	1,488
Windows Update	Microsoft	1,114
Software Update Services	Microsoft	653
HFNetCheck Freeware	Shavlik Technologies	578
Security Baseline Analyzer	Microsoft	376
VB Scripts	NA	186
Fee-based tools		
ZenWorks Suite	Novell	391
HFNetChk Pro	Shavlik Technologies	244
System Management Server	Microsoft	220
Update Expert	St. Bernard Software	126
GFI LanGuard	GFI Software	96
Ghost	Symantec	70
PatchLink Update	PatchLink	44
Deployment Server	Altiris	43
TME Software Distribution	IBM/Tivoli	31
Patch Manager	Ecora	19
Unicenter Software Delivery	Computer Associates	19

process starts all over again. If the test is successful, Step 4 includes distribution from a pilot to full-scale production deployment. And Step 5 mandates follow-up and validation that everything is complete and working.

"It's not the tools or the people, it's not having the time," Williams says of why such a regimented process is needed.

It's the same for John Engates, CTO for Rackspace Managed Hosting, which has data centers in San Antonio, Texas; Hern-

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Our step-by-step guide to addressing the most pressing network issues of the day

Lock down your WLAN

Take these nine steps, then breathe more easily.

■ BY JOHN COX

In August, engineers with AirDefense, a wireless LAN security software vendor, made war drives in Atlanta, Chicago and San Francisco, using scanners to find WLAN access points around downtown office buildings.

The drivers discovered more than 1,100 access points. Of these, 57% weren't using any form of data encryption, although most of the actual data traffic in Chicago and San Francisco was encrypted by other means, such as via VPN. Three-quarters of the access points were broadcasting their Service Set Identifier (SSID), which is like hiding in a game of hide-and-seek while carrying a boom box blaring heavy metal.

The WLAN out of the packing boxes is inherently insecure. But the final WLAN security system you create will hinge on what data you want to protect, how valuable it is and the level of risk to that data. Good WLAN security is expensive: in time, training, maintenance, oversight and in hardware and software costs.

The following recommendations assume an enterprise WLAN of 150 to 500 access points, up to several hundreds of users and a relatively high requirement for protection.

1. Control the wireless clients.

Standardize the WLAN network interface cards (NIC), block user access to them, and register their media access control (MAC) addresses.

Create and enforce procedures and policies for promptly updating clients with software patches and security updates, and for blocking clients running out-of-date software.

Consider disabling NICs' ad hoc or peer-to-peer mode, which lets clients connect to each other without an access point. Attackers can use this feature to lure or force clients to associate with a rogue WLAN.

2. Treat the WLAN as you do the Internet — as untrusted.

Put a firewall between the WLAN and the wired network. This barrier blocks unauthenticated WLAN users from sending Layer 2 packets on to the wired network, for example, as part of an Address Resolution Protocol (ARP) attack. A successful ARP assault lets the attacker route traffic between two computers on your network through his own computer.

3. Protect the access points.

Conceal access points behind ceiling panels or in closets, and secure them to prevent tampering. At one university, someone pulled out the PC Cards from more than 100 access points and tried to sell them on eBay.

Hide access points from attackers by changing the factory default settings for the SSID or IP address information, creating difficult passwords, and turning off SSID broadcasting.

Turn on Access Control Lists for use with client MAC addresses.

Select access points that use flash memory, to simplify future upgrades of security patches and of still-developing security standards.

Consider buying access points that let you create virtual LANs (VLAN). VLANs let you group users and give the groups access to different network resources. VLANs also let you separate management traffic from user traffic.

4. Prevent radio waves from "leaking" out of your site. You can

"shape" radio waves by replacing the standard omni-directional antenna with a directional antenna, especially on the edges of your site.

Another technique is to adjust the power levels of the radios. Using less power means the signal doesn't reach as far.

5. Update NICs and access points with WPA, but don't rely solely on it.

Wi-Fi Protected Access (WPA), an early release of the upcoming IEEE 802.11i standard, fixes a number of problems in the original 802.11 encryption scheme called Wired Equivalent Privacy (WEP).

Among other things, WPA supports 802.1x, which was originally created as an IEEE standard for port-based authentication on wired networks.

But WPA still uses what's called a stream cipher to encrypt wireless traffic, instead of the more powerful block ciphers. Block ciphers are used in Triple-DES and, especially, the Advanced Encryption Standard (AES). AES will be part of the 802.11i standard and likely will require new WLAN hardware that's been revamped to handle the additional processing load.

Make sure the cipher scheme that you choose encrypts the packet's payload.

6. Use a VPN. VPNs, with IP Security (IPSec) or Secure Sockets Layer (SSL) encryption, still

are widely seen as the best protection, although there are an array of limitations: handling only IP traffic and not AppleTalk or IPX or other protocols, installing code on client devices (for IPSec VPNs), forcing users to reauthenticate when moving between access points, bandwidth-intensive operation, administrative overhead, and greater complexity as the size of the WLAN grows.

But VPNs are well understood and are often already part of the enterprise for remote access. They create secure, end-to-end encryption, authentication (often via RADIUS servers) and access control.

7. Complement the VPN with a third-party wireless security controller.

On the market for about two years, security gateways solve some of the problems of using VPNs for WLANs. Many incorporate firewalls and VPN termination, support

Checklist

Some areas of concern network executives should focus on when securing WLANs:

☐ Monitor radio traffic

Protect access points

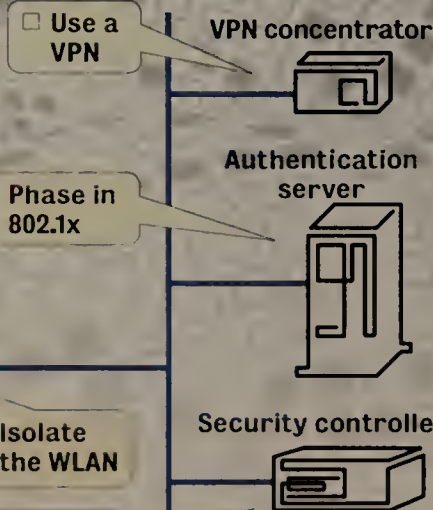
☐ Use a VPN

☐ Phase in 802.1x

☐ Isolate the WLAN

Complement VPN with third-party controller

Secure, control devices



roaming among access points and across subnet boundaries, and centralize security administration.

Controllers can run an array of encryption and authentication schemes, and vendors are adding in the emerging standards such as 802.1x and one or more of the Extensible Authentication Protocol (EAP) methods that 802.1x can support.

A range of these security features are also found in WLAN "switches," devices that combine a centralized box — which applies to WLAN traffic the management, control and provisioning features found in wire-line switches — with companion, highly simplified wireless access points.

8. Plan for 802.1x authentication. VPNs for WLANs will be supplanted by the gradual implementation of 802.1x authentication and the other elements in the IEEE 802.11i standard, such as better encryption.

But some early adopters of 802.1x are running into problems: overloading the processing power of the access points, complicated troubleshooting, and lack of 802.1x support in various client operating systems and NICs. Their experiences suggest that 802.1x implementations will be gradual as vendors work out the kinks.

Within 802.1x, there are many EAP methods from which to choose. For all-Cisco or all-Microsoft shops, you can go with Protected EAP (PEAP), jointly authored by Cisco, Microsoft and RSA Security.

Methods such as Microsoft's EAP-

Utility, continued from page 43

necessary to automate any system to support critical applications.

On the technical side, IT executives should start by documenting the steps they take today to ensure IT systems are available and performing as expected, and then export that information into a workflow management system. One caveat is that the more convoluted a company's IT processes are today, the more difficult it will be to translate those manual steps into automation-ready tasks, Noel says.

Consider services

Service providers offer an alternative way to ease into utility computing.

HP, IBM and Sun are among companies that offer such services, which provide everything from core server and storage capacity to specialized business applications delivery.

Uptake for utility computing is on the rise, according to Gartner. The research firm estimates 15% of corporations will adopt a utility computing arrangement this year, and the market for utility services in North America will increase from \$8.6 billion this year to more than \$25 billion in 2006. By 2006, 30% of companies will have some sort of utility computing arrangement, Gartner predicts.

It won't be easy, but the potential payoff is compelling. ■

Transport Layer Security require digital certificates on clients and servers, and the complexity of the attendant public-key infrastructure. Others, such as EAP-Tunneled Transport Layer Security, are designed not to require client certificates, so users can trigger the authentication process with the same username/password

they use to access the wired LAN.

Stick with a method that supports mutual, or two-way, authentication, to prevent man-in-the-middle attacks.

9. Monitor the network. A growing number of analyzers and monitors let you examine WLAN

radio traffic, discover unauthorized access points, block or disconnect clients as needed, and detect intruders. Some products are Ethernet sniffers adapted to handle WLAN packets, others are specifically designed for WLANs. Vendors include AirDefense, AirMagnet, Finisar, Network Associates, WildPackets and YellowJacket. ■





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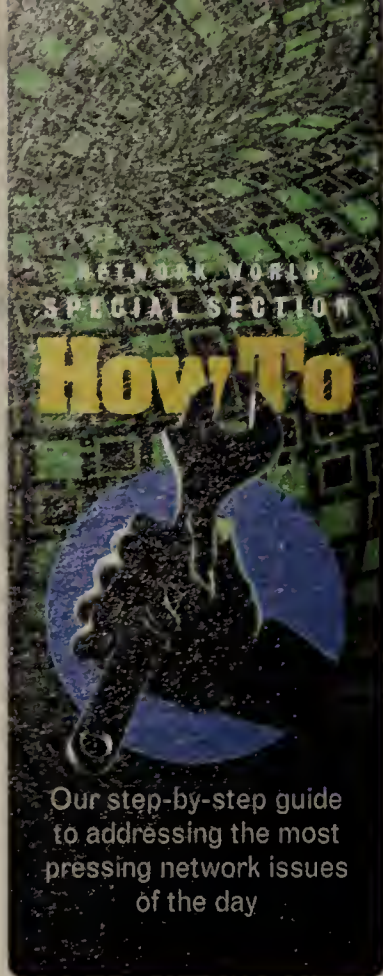
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Eight tips for squeezing bandwidth out of, and adding new speed-enhancing technologies to, your LAN and WAN.

■ BY PHIL HOCHMUTH
AND TIM GREENE

Some companies operate finely tuned environments with network packets humming along at a disciplined pace; others operate at a halting cadence on shared media and cabling from the first Bush Administration. Whichever camp you're in, check out these tips from corporate IT veterans and industry experts for kicking the network up a notch:

1. Go jumbo. Users could squeeze more performance out of their networks with jumbo frames technology.

Switches and network interface cards (NIC) configured to support jumbo frames can process packets larger than the IEEE-standard size of 1.5K bits. Some equipment supports packets as large as 9K bits, but there is no standard packet size for jumbo frames.

"There is no doubt that for higher bandwidth Ethernet [such as Gigabit and 10G] that jumbo frames can be more efficient," says Jeffrey Fritz, the director of enterprise network services at the University of California, San Francisco, and a member of Network World's Global Test Alliance. "Now that 10 Gigabit Ethernet is here and 40 Gigabit Ethernet is on the horizon, there seems to be some resurgence of interest."

Switch vendors with gear that supports jumbo frames include 3Com, Cisco, Extreme Networks, Force10 Networks, Foundry Networks, HP and Nortel.

The trick with jumbo frames is that switches receiving jumbo frames that are not set up to do so will drop or fragment the data. Often, switches supporting jumbo frames must be from the same vendor as well. Fritz says that implementing jumbo frames should be limited to such connections as server-to-server file transfers or back-up jobs.

2. Check your wiring. Sometimes speeding network performance is as simple as looking under a desk or into a conduit in a drop ceiling.

"There are lots of reasons people should reevaluate their cable plant and determine whether its up to snuff," says Jim Trulove, an Austin, Texas, independent network consultant and the author of the books *LAN Wiring: An Illustrated Guide to Network Cabling* and *Broadband Networking*.

When bad cabling or connectors are the issue, "usually it will result in packet loss," instead of links going completely dead, Trulove says.

This can be more of a problem. He says putting a network sniffer on a link and discovering an unusual amount of packet retransmissions is a sign there could be a problem with the cable.

Environmental factors also can cause problems, Trulove says. Wires near elevators or heating systems — which can emit

Adding 'oomph' to your network

electromagnetic fields — can cause problems. Shielding on cable exposed to the outdoors or in unheated conduits can crack and affect performance, Trulove says, but this can be solved by installing wire conduits with special shielding. He also recommends doing an audit of your network cabling and upgrading to at least Category 5e or 6 on all connections.

3. Turn on full duplex everywhere. Verifying the connection speeds on 10/100M or 10/100/100M bit/sec links is another step users can take to speed up their LANs, especially as copper-based Gigabit is used more widely on desktops and servers.

"It doesn't matter if your equipment says it has autonegotiation or not; you should verify the speeds on all links," says David Newman, president of Network Test, a network hardware testing and consulting firm, and a member of the Network World Global Test Alliance.

NICs on PCs are notorious for having the wrong settings because end users accidentally, or deliberately, change a PC from full duplex to half in software. Sometimes switches can leave the factory with misconfigured ports. Most switches come with management tools that let users view port status across all connections on the box, Newman says.

Monitoring links speeds is important in finding out if two ports have mismatched duplex settings. Newman recommends a free software tool called Multi-router Traffic Grapher that let users view link performance and determine if duplex settings are an issue.

4. Extend Layer 3 switching to the wiring closet. Another way to boost LAN performance is to install, or turn on, Layer 3 switch fea-

tures in switches connected to desktop machines.

Instead of installing a full router in the wiring closet, many switches offer basic IP routing and Layer 3-based quality-of-service features on LAN edge switches.

With Layer 3 features at the LAN edge, "you don't have to send every bit of traffic to the big router in the sky to be routed," Trulove says. For example, if two nodes are on separate virtual LANs but plugged into the same switch, a Layer 3 edge switch can route traffic between the two nodes.

Trulove says such a network is more complex than a flat Layer 2 LAN and more susceptible to bugs.

"A corrupted routing table is not something you normally have to worry about on a hub," he adds.

5. Add route control. Implement route control or route optimization at sites that have more than one Internet connection, a configuration called multi-homing. The route-control equipment sits at such a site and is connected to the network as a Border Gateway Protocol (BGP) peer. BGP is the router mechanism that determines which Internet connection to use based on the one that requires the fewest router hops to reach the destination.

But factors other than the number of hops can slow things down. Route-control gear also can determine how much a link costs to decide the best route based on a mix of performance and price, something BGP cannot do.

Larry Pfeifer, network engineer at Widener University in Chester, Pa., uses RouteScience Technologies gear to divert traffic to the best performing of its three Internet access lines: one from Internet 2, one from Yipes Communications and one from

See Oomph, page 60

NETWORK WORLD
SPECIAL SECTION

HowTo



Our step-by-step guide to addressing the most pressing network issues of the day

Storage-area networks have helped scores of organizations more easily allocate and manage storage resources, but most SAN installations are dedicated to servers supporting one application. To gain more value, these SAN islands need to be integrated. But what is the best way to do that?

Because SANs weren't initially designed to work together, a number of issues come into play, from performance and stability to political hurdles concerning who has responsibility for what. The latter can be more challenging than any of the tech problems.

What follows is a summary of lessons learned from network executives and storage experts who already have started down the path of integrating SANs. The bottom line is that while technology in this area is still maturing and standards have yet to be defined, it makes sense to at least start moving in this direction.

"Companies have spontaneously acquired SAN islands to serve specific applications or departments," says Tom Clark, director of SAN technology

Linking SAN islands

■ BY DENI CONNOR AND JENNIFER MEARS

for McData. "Shops may have two, four, 10 or 100 SANs. By connecting SAN islands you can share assets like tape libraries, add a storage array to provide capacity to different applications or consolidate management."

First steps

Kent Smith, president of IPSO, a systems integrator in Wayland Mass., says the first thing you need to do is establish deployment standards.

"Standards for the hardware you're going to allow to be used, the technology you're using to interconnect the SANs — whether it's Fibre Channel or SCSI or iSCSI or whatever — and standards for the software layer to manage those SANs," he says.

That might mean scrapping some investments and modifying others, but keep in mind that technology is moving in the direction of integration.

"What you're seeing from a lot of vendors is hardware that makes it easier to integrate these things," Smith says. "EMC, Brocade, HP, everybody is trying to make it easier to put a hardware layer in between SANs to create a virtual single SAN out of independent islands."

In the end, SAN islands typically are integrated in three ways, experts say:

- Consolidated in a simple core fashion in which a large director-level switch — a chassis-based switch with 64 or more ports and built-in redundancy and availability features — replaces smaller fixed-port switches.

- Deployed in a core-to-edge strategy, where larger director-level switches at the core of the data center are attached to smaller fixed-port switches at the network edge.

- Linked over distances with Fibre Channel over IP (FC/IP) or Internet Fibre Channel Protocol.

What's most appropriate depends on legacy infrastructure and the ultimate goal of the project.

On the cutting edge

When United Airlines Loyalty Services, the wholly owned e-commerce arm of United Airlines, realized it was time to take the next step and integrate its SAN islands, it didn't want to scrap existing investments so went with a core-to-edge strategy.

Gary Pilafas, senior storage/systems architect started with three SANs, one based on Brocade Silkstorm 12000 director-level switches in its central Elk Grove, Ill., data center and two more based on six Silkstorm 2800 and two 3800 switches several miles away in a Schaumburg, Ill., data center.

To link them, Pilafas installed CNT Ultra-Net Edge Routers, which convert Fibre Channel traffic into IP for transmission over a Gigabit Ethernet metropolitan-area network from service provider Nacio Systems. Besides providing core connectivity, the FC/IP link supports replication and disaster recovery.

Pilafas already had integrated the SAN fabrics within UAL Loyalty Services when the call came from corporate to connect them to UAL's existing SANs. He'll again use a core-to-edge strategy to do that.

"As we move toward integrating with UAL, we want to establish a point in one SAN where we put our director-level switches," he says. "Then we will consolidate our SAN islands into the core. Each island can logically become an edge SAN. We want to have a common fabric across all of UAL to be able to utilize resources that are not always busy."

Like UAL, MasterCard is pursuing a core-to-edge SAN integration approach, one that it hopes will save money in the long run.

MasterCard initially brought in SANs to address the extensive data synchronization that was required with its direct-attached storage systems.

"We were consolidating from individual servers with non-shareable [storage] resources into an environment of larger servers capable of supporting multiple applica-

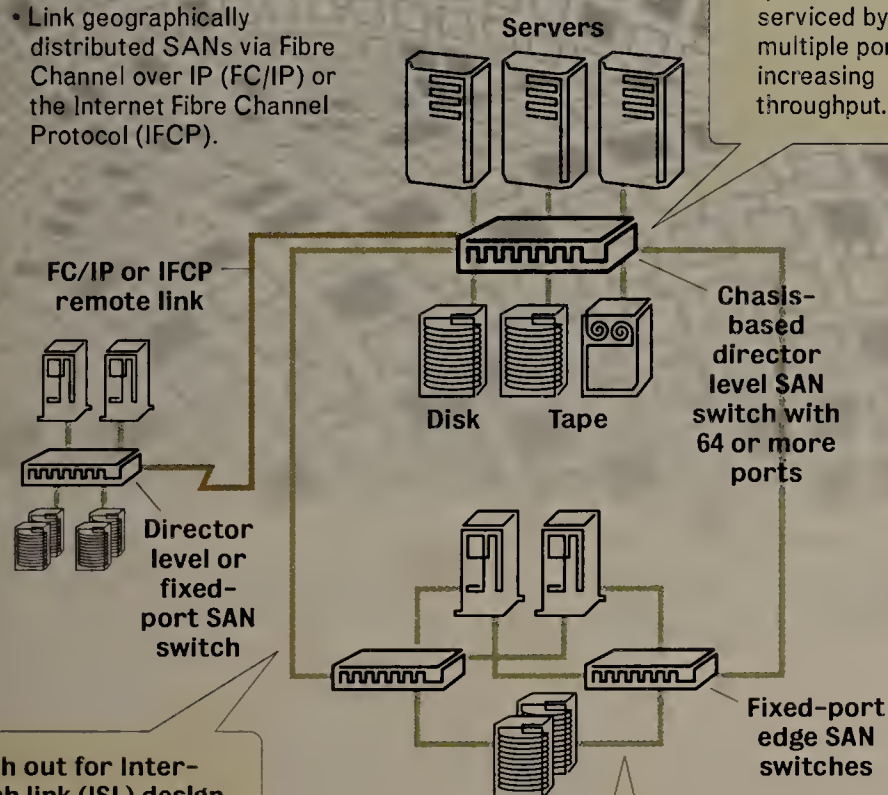
See SAN, page 60

Checklist

Three approaches to integrate SAN islands and what to watch for:

- Swap out multiple smaller fixed-port switches for a large director-level switch.
- Shift smaller fixed port SAN switches to the edge and tie them back to a large director-level switch at the core.
- Link geographically distributed SANs via Fibre Channel over IP (FC/IP) or the Internet Fibre Channel Protocol (IFCP).

□ **Watch out for queues backing up.** Consider aggregating ports via trunking so a queue can be serviced by multiple ports, increasing throughput.



□ **Watch out for Inter-switch link (ISL) design.** Each ISL hop introduces latency, and the general goal is to limit hop count. ISLs should never exceed two hops.

□ **Watch out for failure.** It's best to use redundant links between components to ensure fault tolerance.

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SAN, continued from page 57

tions" all backed up by SANs, says Jerry McElhatton, president of MasterCard's Global Technology Operations in O'Fallon, Miss.

While the SANs "released pockets of underutilized capacity and reduced the need to have redundant copies of data and the associated synchronization issues," each SAN was still land-locked.

"We [now] are bridging the SAN islands with a common set of platforms and tools to allow for complete cross-platform sharing and accessibility," McElhatton says.

He used a series of edge switches that feed into larger director-level switches to give servers multiple paths to storage.

"This final phase reduces our ports, cabling and switch requirements, and decreases the need to buy additional disk for individual servers, all of which reduces our overall costs," he says.

Possible pitfalls

As with any technology deployment, there are traps you need to watch for. Case in point: extending a SAN with too many edge and director-level switches.

"You have to be concerned with inter-switch links [ISL] so you don't create artificial bottlenecks," says Randy Kerns, an analyst with Evaluator Group. An ISL is created when two Fibre Channel switches are tied together via ports called e-Ports. Each ISL, or hop, introduces latency, and the general goal is to

limit hop count.

"ISL hops, when used improperly, can become a problem," says Lee Abrahamson, Solutions Development Manager for CNT. "The Fibre Channel protocol is about how a server finds a target. If you have a random ISL structure with ISLs going every which way, you may have created ISLs that never get used because the [routing] algorithm is based on hop count," Abrahamson says. "For instance, if one route has two hops, and the other has three, Fibre Channel will never select the one that is longer."

Another thing to watch out for is queues backing up, which slows data transfer. McData's Clark says a technique called trunking can be used to manipulate traffic queues and manage traffic across integrated SANs.

"Instead of having each SAN port manipulate a queue, which can get backed up and overloaded [with] slowing traffic, a customer can aggregate the ports via trunking and move the queue so it can be serviced by multiple ports. Throughput is increased and traffic is load balanced across those ports."

United's Pilafas uses trunking to increase access to his storage. "We trunk to the 3800 and then with the 2800s we use ISLs to get to the core of the SAN," he says. "We have more servers connected to the ISL fabric than the trunk fabric. Our total environment is about 600 ports."

Kerns says integrating SAN islands might require dealing with political problems within an organization.

Because SANs have grown independently, they often are segmented by political and departmental boundaries. "When you centralize SAN islands you do it to see dollar savings, but you have to cross political domains. You have the political concern you have to deal with first," he says.

Common management tools sometimes can help mitigate these disputes. "You want to make sure you have roles-based administration so the guy who's handling the topology has a different view of the SAN from the guy managing the local domain," Kerns says. "The big decision is what software I'm going to use to manage that visibility."

Beside management and politics, McData's Clark says the biggest concern with SAN integration is stability.

"The problem today is that if I simply e-Port switches together, then I create this large Layer 2 fabric, and that may be problematic in a number of ways," Clark says. "If you create a native Fibre Channel extended fabric with two or more SAN islands, the whole fabric becomes susceptible to fabric reconfiguration, to state change notification broadcasts."

Fibre Channel switches are similar to Layer 2 Ethernet switches, he says. They maintain information about all the possible routes between devices. When a link breaks, a fabric reconfiguration occurs because the switches must re-evaluate which switch is the primary switch in the SAN, what its unique address is and the addresses of the devices attached to it, thus disrupting the

SAN traffic. When a new device is added or removed from the fabric, a state-change notification is issued, thus slowing traffic.

Rich Copple, CTO of Community Health in Indianapolis, decided to avoid integration for just those reasons.

"We created three SAN islands on purpose and have not consolidated/integrated any," he says. "We had a specific purpose for keeping our fabrics separate, which is redundancy and fault tolerance. Our design eliminates pushing a bad switch configuration to a domain that includes our whole environment and possibly impacting our Tier-1 SAN."

What has to be considered is whether the benefits of integrating SANs outweigh any challenges, IPSO's Smith says. If integrating SANs seems to be the best way to go, the first thing to do is "establish standards for hardware and software," he says. "Establish your benchmark standards as something to evolve to. That doesn't mean you have to immediately conform to those standards, but establish what your objective standards are."

Then after investigating options and putting a solid plan in place, "overestimate the amount of storage you're going to need," Smith says. "You'll still come up short. Data expands to fill the space available. The more space you make available to your users the more they will demand, which brings up the last piece of advice: Have a reasonable charge-back policy to limit what is currently unlimited growth. Storage has to cost something. It has to have a value for it to be controllable." ■

Oomph, continued from page 56

Southern New Jersey Internet Provider.

He says the gear improves performance over BGP-chosen routes to 50,000 Internet prefixes by an average of 75.4%. The improvement jumps to 95% when compared to the performance change of the bottom 20% of those prefixes, he says. The average time saved is 2 seconds, and 5.2 seconds for the bottom 20%, he says.

Other vendors of such equipment include netVing, Proficient Networks and Sockeye Networks.

6. Employ packet shaping.

Packet shapers set traffic into queues based on application with the idea of giving key applications or delay-sensitive programs priority over others. This can be done by limiting certain applications to a certain amount of bandwidth or by blocking them altogether. The devices sit in-line with traffic as it heads toward the WAN from LAN devices, and companies such as NetReality and Packeteer make traffic shapers.

By using Packeteer equipment that gives priority to a Citrix Systems-based

medical records application called MultiAccess, Western Washington Oncology in Olympia, Wash., was able to eliminate most end-user help calls.

Five offices connect to each other over the Internet via VPN, but each has a limited amount of bandwidth, a T-1 line (1.54M bit/sec), connecting it to the Internet. According to Craig Wyzik, IT manager for the healthcare provider, he set Packeteer gear to give MultiAccess top priority followed by laboratory applications, Web browsing and then e-mails.

Wyzik says that before installing Packeteer equipment a year ago, most Citrix-related complaints could be traced to large e-mail attachments, software downloads or file share hogging bandwidth. Since then, the source of complaints about poor performance for MultiAccess have to do with bugs in the software, he says.

7. Apply compression.

WAN connections generally are too small to pass traffic as if it were on the LAN, because of the high price of long-distance bandwidth. But equipment placed at each site connected to the WAN can scan the traffic, replace repetitive patterns with shorter

patterns and thereby reduce the number of bits that have to be sent across narrow WAN connections. This gives the effect of increasing bandwidth. Companies such as Expand Networks and Peribit sell this type of equipment.

The results can be dramatic. For instance, optical equipment vendor Finisar uses Peribit compression gear on links to four other company sites, one as far away as Malaysia, says Chip Greel, Finisar's network architect.

Use of the gear cuts the volume of traffic in half, letting the company connect to the Malaysia site via a T-1 connection rather than paying \$6,000 per month for a second T-1, he says. Depending on the traffic mix at the moment, sometimes traffic is reduced by as much as 70%, Greel says.

Without Peribit devices, boosting performance at other sites would require more bandwidth at additional monthly costs, he says.

8. Add zip to SSL.

Redline Networks' acceleration appliances speed up Internet Secure Sockets Layer transactions by reducing the number of bits it takes to transmit Web pages by 50% to 70% using compression and editing out data not

needed for the requesting machine to build the page.

It also cuts the number of TCP requests application servers have to handle. Getting swamped by such requests can slow transaction times on busy servers to a crawl. Redline appliances create TCP sessions to the servers but then multiplex requests from many requesting machines across a single TCP session.

Redline's equipment has saved ChartOne Medical in San Jose from buying more Sun servers to handle access to its Web-based PeopleSoft financial application, says Henry Svendblad, ChartOne's director of IT. The site handles more than 300,000 transactions per day. CPU use dropped from 80% to 90% down to between 2% and 10%. He also has been able to drop the use of terminal servers ChartOne had used a way to enable access to PeopleSoft over low bandwidth connections. ■



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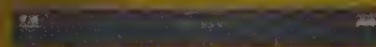
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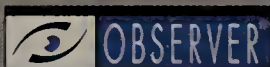
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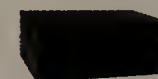
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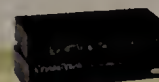
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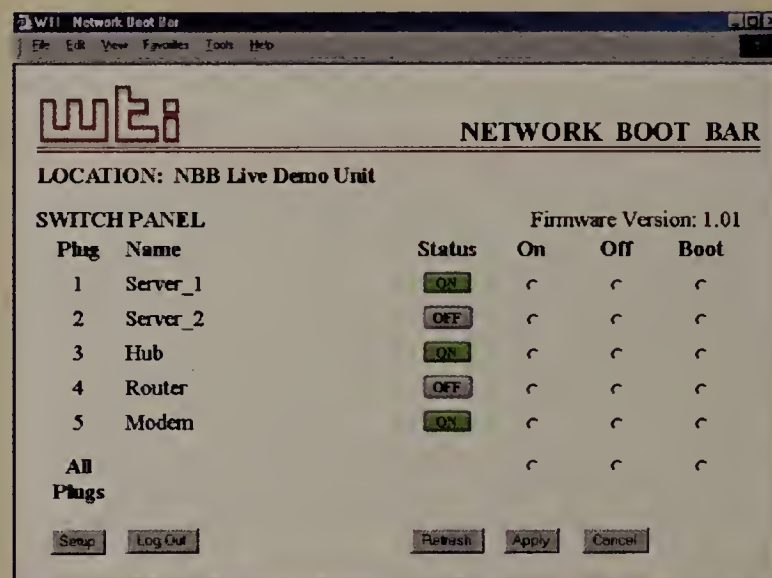
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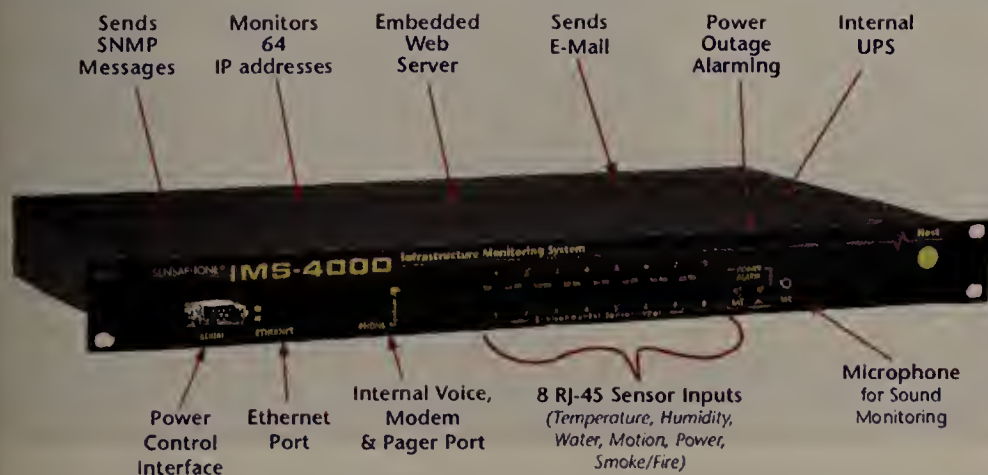
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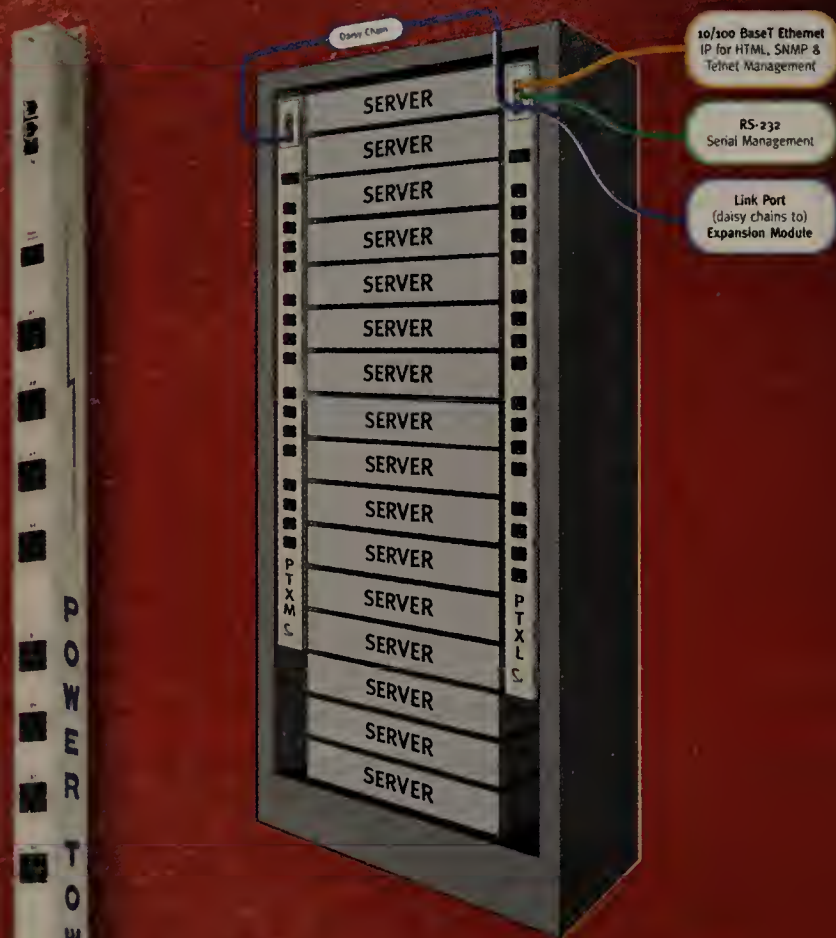
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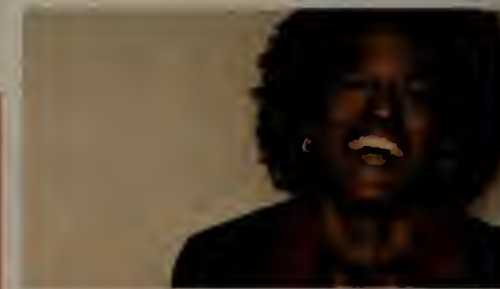
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BackSpin Mark Gibbs



They are out to get you

Yep. It's true and you aren't paranoid. At least not in the aliens-are-about-to-abduct-me-is-that-a-black-helicopter-Kennedy-was-assassinated-by-the-Mafia-or-was-it-LBJ kind of way.

No, your feelings of paranoia are really just your natural sense of self-preservation honed by many years of being everyone's whipping boy and reacting to how the IT world really is. Let's look at the sources of your paranoia:

1. Senior executives: They never start out to get you. They start out with what they think are reasonable requests ("Could we implement an enterprise-wide CRM system for our 10,000 users by next Tuesday?"), and when you try to explain politely why they obviously are operating in a different universe than the one you inhabit, they get mad.

The reason they get mad is they don't understand what you're saying. You could be reciting the Old Testament in Swahili for all they know or care, and the fact that you can't make it any clearer feels to them like a hearty slap on the back when they have a sunburn. They are out to get you for not doing what they think they heard they might need because they think it's strategic.

2. Vendors: They only want your money. They throw around the word "solution" even though they have no real idea what your problem really is and wouldn't care if they did.

Most of them don't give a fig why you're buying, whether their product is what you actually need, whether you really can afford it and whether once installed it will turn into a gigantic white elephant with enough mass to collapse into a singularity that sucks the entire organization into oblivion.

Here, paranoia is an absolute must. You need to set your BS detector to its most sensitive and your phasers to stun. They are out to get you and your money and your little dog, too.

3. Your users: They often sound like they have real problems, but let yourself get too sympathetic and too involved and your productive time will be sucked into the same black hole that the white elephant created.

You know users will lie, cheat and sell their grandmothers if they can either get you to do their work for them or blame you for not helping them get their work done. They will get anyone they can, and you'll do nicely because all the senior executives obviously have it in for you anyway.

4. Telecom providers: If it weren't for a couple of centuries of law enforcement these guys would be standing by the roadside with pistols drawn, stopping you as you pull into the car park and crying "sign this over-priced, over-complicated service contract or your life!"

Once they get you (and your money) you can forget about support or service unless you are willing to either spend significant portions of your life on hold or pony up lots of cash for an over-priced, over-complicated support contract.

5. All those people who want your job: It's a tough economy out there and from where they're sitting, they can't see the senior execs, the users and the telecom providers. If only they had the view from the bottom ...

6. Everyone else: Yep, there's the government trying to regulate privacy and it is (of course) your problem, the tax man who seems to think you work for him, hackers who just want to ruin your life 'cause they can, and ... well, everyone.

Yep, in IT it pays to be paranoid because they are all out to get you. Just be glad you're not a columnist.

Get at Backspin at backspin@gibbs.com.



'Net Buzz News, insights, opinions and oddities

By Paul McNamara

Mail call ...

Two things about reader e-mail makes me thankful: First, it means someone is reading; second, it makes possible these periodic "Letters to 'Net Buzz'" columns.

Here's a sample of what has been on your minds of late:

An item pointing out that traffic to VeriSign's Web sites increased dramatically during the company's short-lived and now suspended use of its Site Finder redirection service generated a good deal of response, most negative toward VeriSign.

"Sure, Site Finder created a bunch of traffic and put VeriSign right up there with Amazon and Disney, but it's unlikely it was the same quality of traffic," Doug Murray writes. "The folks who visited the latter two probably meant to go there while the VeriSign hits don't really amount to much more than self-generated spam. Of course, with the advantage of getting hits for everybody's typos, they only need a spam-type response rate to realize a business value. But then factor in the ill will and bad press, and with any luck, Site Finder has all the value of New Coke."

A VeriSign spokesman also wrote to tell me critics have gotten it all wrong about the motivation behind Site Finder. "Being able to offer services that we think benefit the Internet user is what motivates us — because that is good for the user and good for VeriSign, too," he says.

Make of that what you will.

A column recounting the travails of a Microsoft Hotmail user included his complaint that being forced to change e-mail addresses was exactly the type of consumer affront that brought us to last week's introduction of wireless number portability.

"Your analogy of e-mail portability to phone number portability is right on," Bill D'Avanzo says. "There should be a law requiring major providers to forward mail

— for a period of time anyway — perhaps for a small, specified fee."

He might have a point, but I'm not sure about adding another law.

Like most commentators who addressed the subject, Buzz took to task as patently offensive DARPA's short-lived scheme — dubbed the Policy Analysis Market (PAM) — to use the predictive powers of online futures trading to combat terrorism. Most doesn't mean everyone, of course.

"Count me opposed to your views on PAM," Raymond Ballou writes. "Let them do whatever it takes to save lives. My sensibilities were not in the least bit offended."

Let's toss in a piece of fan mail just for fun.

"I am not your typical reader. I hardly understand most of what I am reading, but my thanks to you for making most of your editorial articles simple to understand," Mark B. writes. "Also, if you ever get the urge to change the name of your column, may I suggest 'McNamara's Band-width.'"

Ouch. Think I'll stick with 'Net Buzz.

A rant about Orbitz and pop-ups garnered this helpful advice:

"Get the Google toolbar. As an added bonus, it blocks pop-ups for free," Phil Daley writes. "Since I installed it last month, it has blocked 210 pop-ups."

As an added added bonus — at least for me — this is one pop-up blocker that our IT department lets us use.

Let's finish up with one of my all-time favorites, which comes from a reader who took great exception to my critique of the impact European privacy law is having on American business.

"Read your ridiculously biased diatribe against Europeans and privacy protection," fumes this fellow, who asked not to be quoted. "You are one of the reasons for the decline of the American empire."

Most people in most jobs never get blamed for the fall of empires. It's just one reason I find this gig so much fun.

There's always room for more. The address is buzz@nww.com.

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